



Saskatchewan
Education



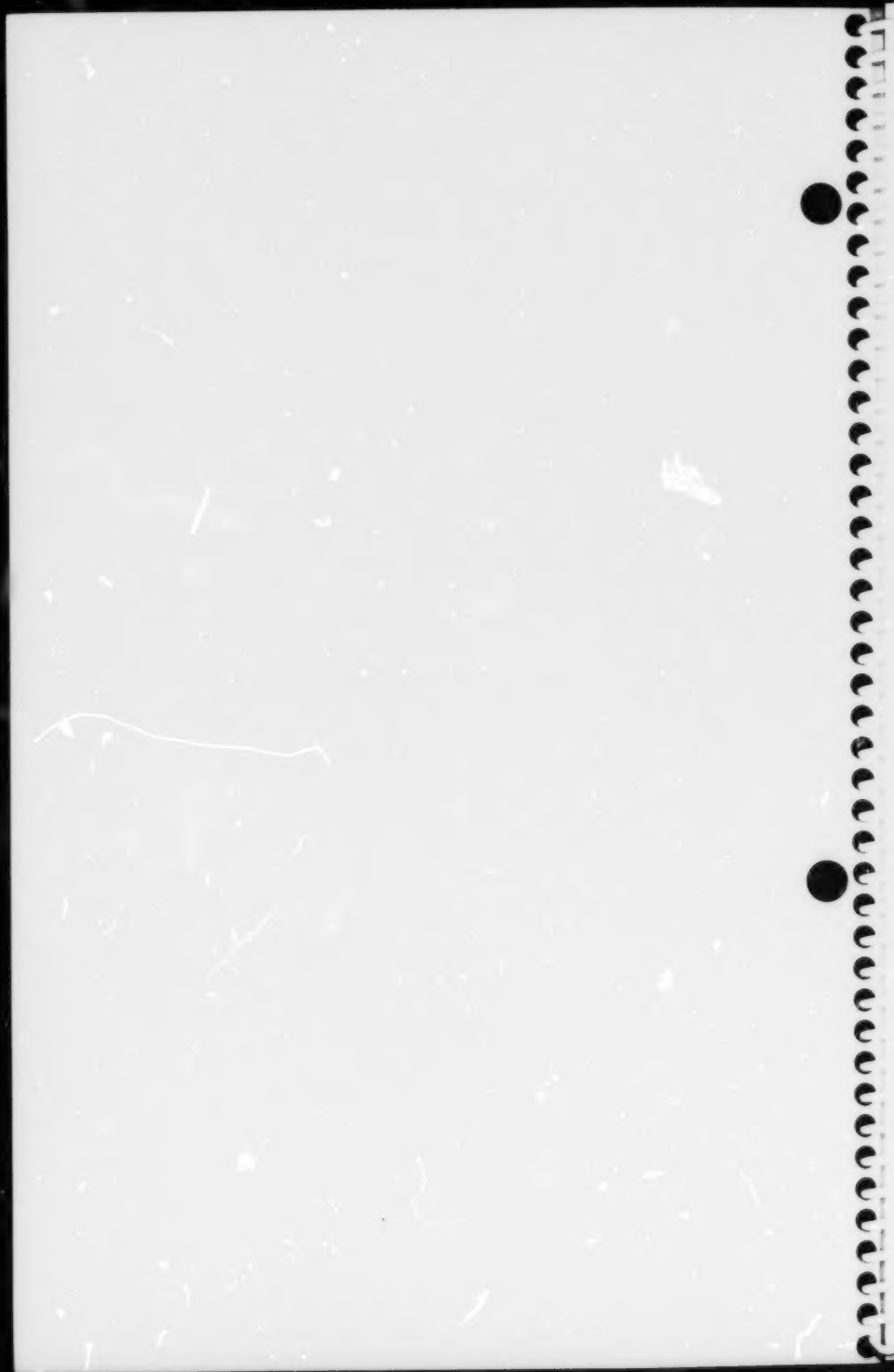
Out to Learn

Guidelines and Standards for
Outdoor Environmental Education
Second Edition



This document contains
recycled paper.

February 1991



Out to Learn

**Guidelines and Standards for
Outdoor Environmental Education**

Second Edition

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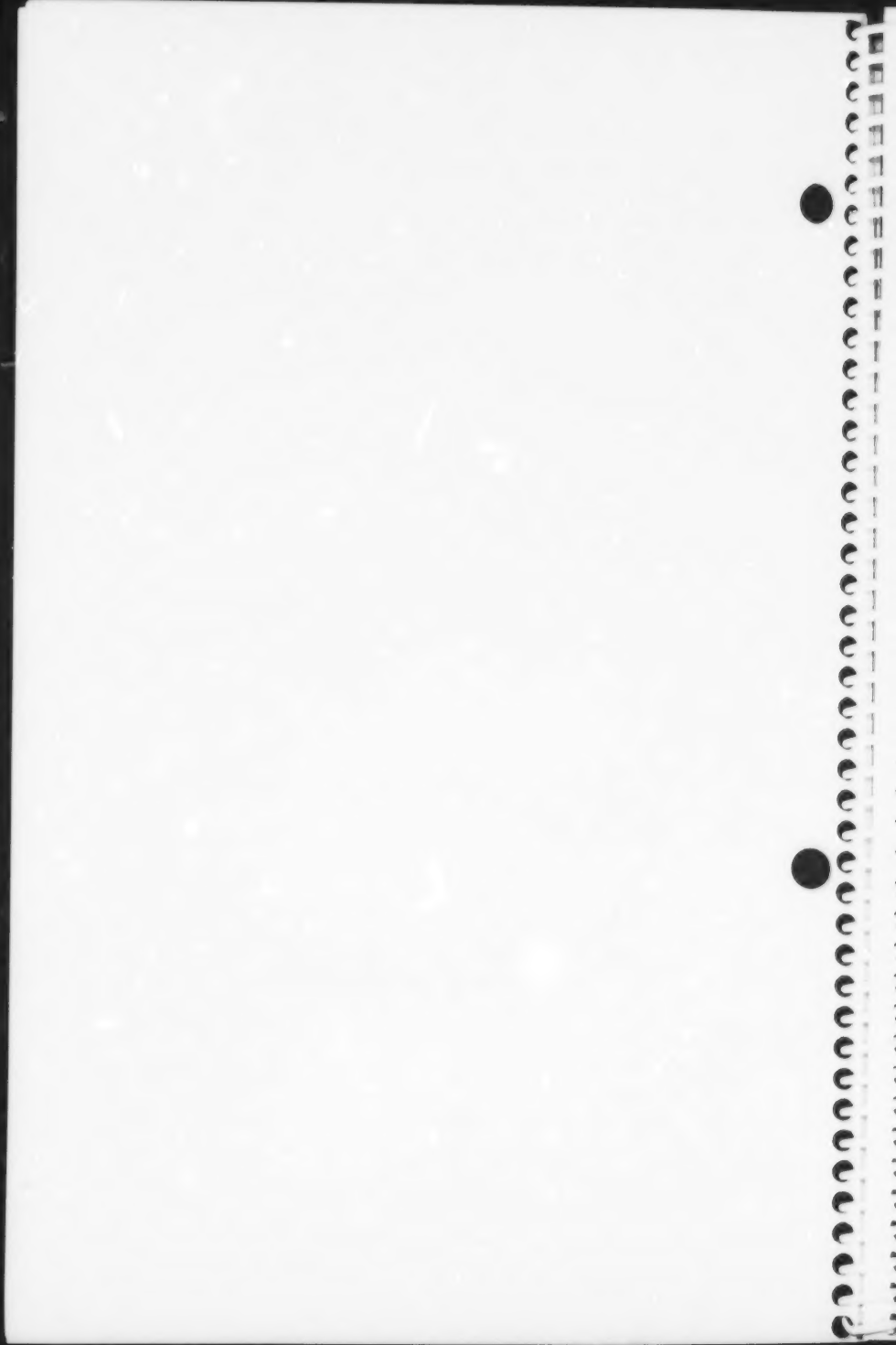
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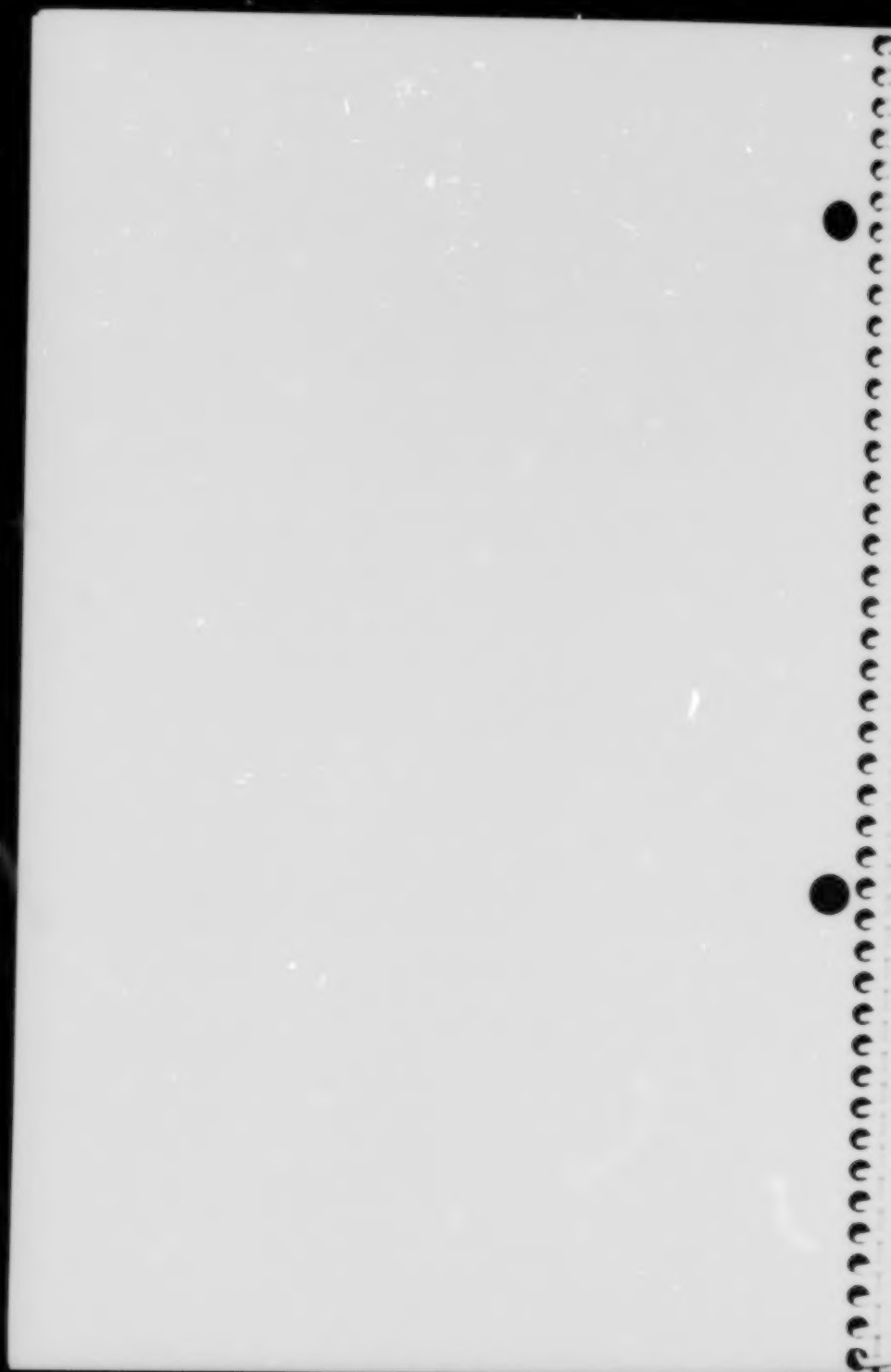
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Introduction

This manual is intended to provide an administrative guide to planning, organizing and conducting an outdoor environmental education experience for kindergarten to grade 12 students. Therefore, it focuses on environmental protection, planning, health and safety, and responsibilities of groups and individuals. Specific learning activities which make up the educational program during an outdoor environmental education experience are discussed only briefly within the context of the Common Essential Learnings.

Each chapter of the manual addresses different aspects of organizing an outdoor environmental education experience. The appendices provide supplementary information. Appendices A and B will be of particular interest to teachers. Appendix A is a listing of instructional materials and Appendix B is a listing of community organizations and educational programs that can be accessed to enrich and enhance students' outdoor environmental education experience.



Chapter One

Outdoor Environmental Education in the Educational Program

Why Outdoor Environmental Education?

Outdoor environmental education focuses on the environment, natural and constructed. It takes place in the out-of-doors where students can learn about the environment by experiencing it directly.

Outdoor environmental education does not require a wilderness trip. It can take place on a city street, a playground, a nearby park or campground as well as in a wilderness area. The setting can be either urban or rural. An outdoor environmental education experience can be of any length. Some are only a few minutes, others last several days. The experience may take place in any season of the year — just as much can be learned in winter as in summer.

Perhaps the major purpose of outdoor environmental education is to help students develop an understanding of the place that people have in the earthly balance. It teaches them that if life on this planet is to continue, people must live in the environment as one part of a vast interdependent network — not outside the environment,

exploiting and using it. Outdoor environmental education endeavours to assist students to experience their relationship to the environment with their spirits and their emotions as well as with their intellect. On a practical level, students will learn how to care for the earth during their outdoor environmental education experience. They will learn how to go on a hike and literally leave nothing, not even a footprint. They will learn how to keep garbage to a minimum, how to avoid polluting water and how to avoid disrupting the natural cycles of animal life (Link, 1981).

Outdoor environmental education fosters social and personal development as well as intellectual growth. Students must assume responsibility for their own behaviour and safety. Misbehaviour can jeopardize personal and group well-being. Similarly, there is a type of group and interpersonal interaction which rarely occurs in the classroom. Effort and energy must be put into getting along and cooperating for the benefit of all.

Outdoor environmental education is experiential. Students learn by immersing themselves in an experience, not by reading about the experience. Learning comes through use of all the senses. When a student sees, hears, tastes, touches and smells during an educational experience, that experience becomes a part of the student in a way that no textbook activity can.

The basic methods of outdoor environmental education are observation, research and reflection. Direct observation arouses interest, curiosity and a desire to investigate. Research involves asking questions about the phenomena experienced in the outdoors and looking to other people, printed sources and direct experience for the answers. Reflection provides time for students to integrate what they have learned into their existing knowledge and to develop new understandings and appreciations (Rillo, 1985).

Because outdoor environmental education is interdisciplinary, all of the Required Areas of Study can contribute to students' awareness, appreciation and understanding of the world around them. For example, an outdoor environmental education experience is an ideal situation in which to teach mathematical processes such as measuring and estimating. Concepts from the world of art such as colour, line and symmetry can be taught by examining leaves, flowers, sunsets and other natural phenomena. Running water, wind, and bird and animal sounds can be recorded and incorporated into students' own musical compositions. During each of these activities, students are learning content from a Required Area of Study but they are also experiencing the environment and learning more about it.

Outdoor Environmental Education and the Common Essential Learnings

The Common Essential Learnings (C.E.L.s) are not a subject in themselves, rather they are to be integrated into all areas of study. An outdoor environmental education experience offers many opportunities to develop the C.E.L.s.

The goal of *Communication* is to promote students' learning in all school subjects by improving their language abilities within each subject. An outdoor environmental education experience gives students many opportunities to learn the names of plants, animals and natural phenomena. During their outing they will hear these words used in context by their leaders and by other students and will incorporate them into their spoken vocabularies in the most natural way possible. In addition, students will have many opportunities for spontaneous discussions and conversations and thus

increase their verbal fluency and improve their comprehension. Students can be encouraged to carry a notebook with them during their outdoor environmental education experience to record new words describing the environment. (The leader may need to help with spelling.) Creative and practical written activities, before, during and after the outing can be structured so that students use the new words and phrases they have learned. Proficiency in using these new words and phrases in written work as well as during speaking will be the result.

The goal of *Numeracy* is to develop individuals who can cope confidently and competently with everyday situations demanding the use of mathematical concepts, as well developing their ability to learn new concepts when necessary. An outdoor environmental education experience is an ideal setting to develop numeracy because it presents many opportunities for practical, immediate "hands-on" mathematical activities. Students will be using numbers in a real-life situation, not solving abstract problems in a book. For example, they can weigh and measure natural objects, and estimate distances and heights. Outdoor environmental education experiences may include orienteering which requires that students use mathematics in a variety of practical ways.



The goal of *Technological Literacy* is to develop individuals who understand how technology and society influence one another and who are able to use this knowledge in their everyday decision-making. The most important issue relating to technological literacy which can be addressed during any outdoor environmental education experience is the relationship between people, technology and the natural world. Experiences can be structured so that students see how even the most sophisticated technologies ultimately depend on natural resources for their existence. They can also be structured to emphasize the impact that these technologies have on the environment. The fact that the resources of the earth are limited is another important concept which can be emphasized during outdoor environmental education experiences. Personal decision-making about the way in which natural resources should be used and preserved will grow naturally out of these realizations.

The goal of *Critical and Creative Thinking* is to develop individuals who value knowledge, learning and the creative process, who can and will think for themselves, yet recognize the limits of individual reflection and the need to contribute to and build upon mutual understandings of social situations. Creative thinking is generally considered to be involved with the creation or generation of ideas, processes, experiences or objects; critical thinking is concerned with their evaluation.

In the outdoors, students will have many questions about why things are the way they are. "What caused this rock formation? Why does the water flow in this direction? Why does this leaf have bumps on it? How does this dam affect the environment?" Leaders can promote creative thinking by encouraging students to recall the facts they know and then using those facts to generate a hypothesis to explain the phenomenon observed. They can promote critical thinking by asking students to evaluate their hypotheses, comparing them to the hypotheses of others

and to information provided by naturalists, Indian elders or printed sources of information.

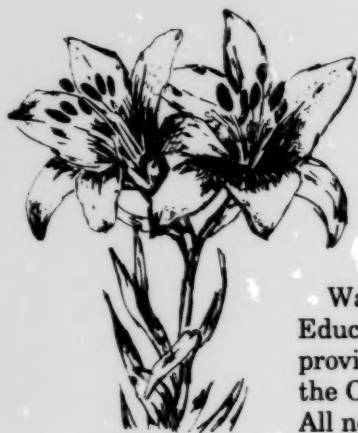
The goal of *Personal and Social Values and Skills* is to assist in the development of compassionate and fair-minded people who can make positive contributions to society as individuals and as members of groups. Outdoor environmental education offers many opportunities to develop this C.E.L. On an outdoor environmental education experience everyday tasks such as cooking and cleaning up become the responsibility of the group. Students must cooperate and work together if they are to accomplish anything. Similarly, students will be living together in tents or cabins. The extent to which they benefit from this experience will be directly related to the effort they put into learning and practising group living skills.

One of the goals of education in Saskatchewan is to help all students develop their potential to the fullest extent. Certainly, a student's potential should never be limited by his or her gender. Both females and males should have the same opportunities and experiences. An outdoor environmental education trip is an ideal opportunity to model this principle. All jobs, including those which require physical strength, should be assigned to students in rotation or by some random process such as flipping a coin. Jobs should never be assigned by sex. Sleeping and personal hygiene are the only activities for which males and females should be separated. In all other situations, work and recreational groups should include both genders. Any competition should be between work groups not between the genders. With such a fair and equitable arrangement, it may not be necessary to discuss the relationship between the genders; students will just naturally assume that both males and females can do and be anything they choose.

Outdoor environmental education is also a good time to help students develop an appreciation of the traditional

way of life of Saskatchewan's Indian nations. Students who live, work or play outdoors for an extended period of time may come to realize the limitations imposed upon human existence by Saskatchewan's harsh climate. Leaders can emphasize the traditional idea of living in harmony with nature in contrast to the non-traditional perspective of using or unduly exploiting nature. Such an approach may lead to students acquiring a greater respect for the complexity and spiritual richness of Indian cultures.

Independent Learning focuses on creation of the opportunities and experiences necessary for students to become capable, self-reliant, self-motivated and life-long learners. The ability to learn independently is important during an outdoor environmental education experience, just as it is in a regular classroom. The very nature of an outdoor environmental education experience means that students are constantly taking in new information which they must interpret and integrate into what they already know. One way that leaders can assist students to be independent learners is by having them identify some of their own learning goals and then assess the extent to which they have achieved these goals.



Western Red Lily

Note: Definitions of the Common Essential Learnings and additional information about them were taken from *Understanding the Common Essential Learnings* (1988). Regina: Saskatchewan Education.

Watch for other Saskatchewan Education publications that provide guidance on incorporating the Common Essential Learnings. All new curriculum guides will include information on this topic.

Outdoor Environmental Education — Implications for Students, Teachers, School Board and Community

Implications of outdoor environmental education for:

Students

Outdoor environmental education is a part of school activities; therefore, students should:

- assume responsibility for their own learning and their own behaviour;
- use all of their senses during learning;
- cooperate with their fellow students and their teachers for the benefit of all;
- respect the environment and live in harmony with it.

Teachers

Outdoor environmental education is part of the school program; therefore, teachers should be concerned with:

- professional development — staying up-to-date in skills and knowledge;
- modelling appropriate behaviour regarding treatment of individuals and the environment;
- duties related to outdoor program preparation:
 - familiarization with standards;
 - coordination of subject areas;
- protection, appreciation and understanding of the environment that is being experienced.

School Board

Outdoor environmental education is a basic educational method and to be effective it should receive School Board:

- approval;
- financial commitment regarding:
 - site development;
 - equipment;
 - supplies;
 - transportation;
- support for training and providing qualified staff;
- support for time within the curriculum to conduct the program.

Community

Outdoor environmental education is a part of the school program that takes place in the community; therefore, the community should be considered as:

- a contributor of facilities and equipment;
- a provider of leadership;
- an environmental area that must receive attention and protection;
- a source of programs.



Chapter Two

Environmental Protection

Respect for the environment and an emphasis on ways that the environment can be protected should be an integral part of the school curriculum at every grade level and subject area. For example, in language arts, environmental topics can serve as a focus for creative writing; in health, students can study the effect of air and water pollution.

During outdoor environmental education experiences, students have an opportunity to practice first-hand the environmental protection principles they learned in the classroom. Students learn by example as well as through direct instruction. Therefore, the school provides its greatest lesson in environmental ethics by the way students are taught to treat the natural and urban areas they are studying. If we justify destruction and modification of the environment for purposes of study, then we have a poor argument to halt destruction and modification for other purposes (Link, 1981).

General Principles of Environmental Protection

An outdoor environmental education experience can be anywhere from an hour to several days long. It can take place on the school playground, at a residential camp or

in the wilderness. It can occur in winter or summer. Regardless of the form that an outdoor environmental education experience takes, basic principles of environmental protection should be followed.

- Leave the natural environment as it is. Removing or changing anything contributes to destruction of the environment. Dead leaves and tree branches will form the next generation's soil and should be conserved. Moving rocks or logs disrupts the patterns of nature and destroys the habitat of the insects and animals that live underneath.
- Use photography and sketches to record information about plants and animals. Keep collection of specimens to an absolute minimum. If living material is taken for purposes of study, it should later be returned to the exact spot from which it was taken.
- Keep movement to a minimum. Use existing paths and trails. Creating new trails or paths destroys vegetation unnecessarily. Avoid walking on wet ground such as marshes or stream edges where footprints will be deep and lasting.
- Pick up any garbage or litter that is lying around.
- Behave in ways that preserve the tranquility of the environment. Even on an urban outdoor experience radios, shouting, etc. will disturb others. Respect others' need for the outdoors.
- Leave no garbage of any kind on the property.
- Make safety a primary concern. There are three levels of safety which should be considered. The first level is safety of individuals. The health and safety of human beings is always the first priority. Next is safety of the environment — preserving it and protecting it. Last is safety of equipment — ensuring that equipment is not lost or damaged.

Guidelines for the Residential Camp

Some schools will use an existing developed campsite, often one belonging to a church or community group. Campsites range in sophistication from those that are fully serviced with electricity, running water and heated accommodation to those that are a collection of shelters or cabins with no additional services. Guidelines for protection of the residential camp environment include:

- Use boats powered by outboard motors only for rescue purposes. In every other situation, use canoes and rowboats to preserve tranquillity.
- Leave radios at home for the same reason.
- Always improve the campsite in a natural way before you leave, perhaps by planting grass seed, trees or shrubs in areas near the camp that have been trampled.
- Ensure that covered garbage cans are available at appropriate locations throughout the camp.
- Never use lakes, rivers, streams for bathing or washing clothes and dishes.
- Put all food scraps in covered containers for disposal at a landfill site or by burning.



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- Use bicycles or walking for transportation as much as possible. Motorcycles and cars cause noise and air pollution, and use valuable fossil fuels.

Guidelines for Wilderness Camping

Wilderness trips will vary in length. In some cases, students staying at a residential camp will include a half-day or overnight wilderness trip in their program. In other cases, the wilderness trip will be several days long and students will travel long distances. Guidelines for the protection of the environment during wilderness trips include:

- Keep the group small. The fewer people camping in one spot, the less impact there will be on the area.
- Limit stays to four days at one site in order to minimize environmental damage.
- Use a different area for camping each year. Campsites need time to return to their natural state.
- Camp a reasonable distance away from streams, lakes and rivers to avoid contaminating water.
- Observe local rules concerning open fires. In some parts of the province, open fires are forbidden. Use of a small portable camp stove is generally preferred to an open fire as it is cleaner, safer and more environmentally friendly.
- If using a campfire, use an existing fire-ring or pit whenever possible.
- Avoid digging or displacing rocks if it is necessary to create a fire-ring. Create a pad of sand and build the fire on this pad. When the fire is out spread the sand widely throughout the environment. Another

possibility is to build the fire on a bare flat rock surface.

- Use only dead wood for firewood. Small pieces of wood are better than large ones because they burn more quickly and can be broken by hand. Gather wood from a wide area around the campsite so that the area doesn't look bare. Only use dead wood on the forest floor; never strip branches from trees. Gather only as much wood as you need; don't stock-pile it.
- Clean up the fire site by burning all wood to ash and pouring water on the ashes. The ash should be cold to the touch. Scatter the ash widely and put the rocks back in their original locations. Put the soil which was excavated to make the fire-ring back in its original location.
- Avoid burning food scraps or garbage. Burning anything other than firewood is wasteful and inefficient.
- Observe local rules about location of campsites. Some parks allow tents to be put up only in designated spots.
- When you are selecting a campsite choose either a spot where many people have camped before that is so heavily damaged that further use will cause little additional deterioration or a pristine site that is durable and shows no sign of previous use. Durable sites are those located on dry grass, sand or rock where there is little vegetation which could be destroyed.
- Drive tent pegs into the ground, not into trees. The ground will heal quickly; the trees will not.
- Use tents or plastic sheets for shelter rather than cutting tree branches for this purpose.



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- Pack out all food containers, plastic wrap, food scraps and other types of garbage. Burning or burying garbage harms the environment. Tin cans can be flattened and plastic or paper food wrappers folded to reduce the space they occupy. Perhaps most importantly, plan the trip carefully so that there are few leftovers and little garbage.
 - Use "cat holes" to dispose of human waste. Dig a hole several centimetres deep in the soil. When you're done, cover the cat hole with four or five centimetres of top soil and camouflage the surface. Cat holes should be at least 100 metres away from water sources.
 - Use soap, whether for dishwashing or bathing, at least 100 metres away from water sources. To bathe, carry water 100 meters from the source, get wet, lather up and then rinse off. Use similar procedures for dishwashing. This allows wastewater to filter through the soil and break down before returning to any body of water.

The guidelines for wilderness camping which appear above have been adapted from Hampton, Bruce and Cole, David. (1988). *Soft paths: How to enjoy the wilderness without harming it*. Harrisburg, PA: Stackpole Books for the National Outdoor Leadership School. Used with permission.



Chapter Three

Planning the Outdoor Environmental Education Experience

Communication

Parents and members of the public are always curious about outdoor environmental education. They ask questions such as: "What do the kids learn? Why is outdoor environmental education included in the curriculum? What activities will be part of the program?" Answering these questions and others is an important part of preparation for any outdoor environmental education experience. Some schools invite parents and other interested people to a meeting four to six weeks before the outdoor environmental education experience begins. At this meeting, discussion focuses on the role of outdoor environmental education in the educational program and on plans for this specific outing. Parents are given opportunities to become involved in various aspects of the program.

Communication with the school board is also important because ultimately the board authorizes and funds all school activities. School board members should, of course, be invited to attend any general meetings held and in some circumstances a special presentation to the board is appropriate. Consider inviting school board members to

participate in the outdoor environmental education experience either as resource people or as volunteer supervisors. They'll have a good time and will learn what outdoor environmental education is all about in the most natural way possible.

Planning

Detailed and thorough planning is essential to the success of any outdoor environmental education experience. Planning is easier if there is a model based on previous experience which can be followed. In many schools, outdoor environmental education is a long-standing part of the program. In these cases, much can be learned from the successes and failures of previous years. A school that is just beginning an outdoor environmental education program can borrow from the experiences of other schools. Most teachers and students are willing to share their knowledge and expertise.

The steps to follow during planning are outlined below.

Establish Educational Objectives

Objectives for an outdoor environmental education experience can relate to students' intellectual, social, emotional or physical development. They can be as complex as gaining a greater appreciation of the natural world or as simple as learning to identify a particular plant or animal. The objectives should be written in simple language and copies provided to all students, parents and staff.

The objectives should provide a foundation upon which the rest of the experience is built. The length of the outing, its location and specific educational activities should all be dictated by the objectives.

The publication *Essential Learnings in Environmental Education* provides a bank of concepts upon which outdoor environmental education programs can be based. Individuals who are planning outdoor environmental education experiences will find this publication to be a great help when they are establishing educational objectives and designing the overall program. Detailed information about this publication appears in Appendix A.

Present a Proposal and Receive Authorization from Principal and/or Director of Education

Every outdoor education experience should receive formal approval from the appropriate authority. Procedures will vary from school to school and from one school division to another.

Involve Students and Parents in Planning

When people participate in planning an event they have a greater sense of ownership and more commitment to it. There are other benefits as well. In addition to enhancing the success of the trip, planning done by students can be a worthwhile learning experience in itself. Involvement by parents means that there are more people to share the work which needs to be done.

Areas for student involvement include:

- establishing objectives;
- selecting the site;
- making transportation arrangements;
- financing;
- organizing menus, clothing and responsibilities;
- scheduling;
- developing guidelines for behaviour;

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- evaluating specific activities and the experience as a whole.

Areas for parent involvement include:

- making transportation arrangements;
- financing;
- organizing menus, clothing, etc.;
- developing guidelines for behaviour;
- evaluating specific activities and the experience as a whole.

In some situations, it is appropriate to involve older students in outdoor environmental education activities for younger ones. For example, grade eight students could act as group leaders for a grade five class.

It is important to remember, however, that regardless of the degree of student and parent participation, ultimate responsibility for planning remains with the designated group leaders.



Prickly Pear Cactus

Select a Site

Sites for outdoor environmental education experiences can be grouped into four categories:

- school sites — These are usually on the school playground.
- community sites — Both urban and rural sites in the area right around the school have great educational potential.
- residential camps — Residential camps range from those that are highly developed with plumbing, electricity and most of the other comforts of home to these that provide only fire-pits or barbecues and level places to pitch tents. Some school divisions maintain their own residential camp sites; others rent from a church group or use a provincial park.
- the wilderness — During a wilderness experience all food and equipment must be carried in backpacks. Many schools include a one- or two-day wilderness experience in a longer residential camping experience.

The site for an outdoor environmental education experience should be selected with the objectives of the experience in mind. The site should be one that facilitates the attainment of those objectives. For example, if an experience is intended to help students learn to recognize various types of insects any of the four locations would be suitable, but if one of the purposes of the experience is to teach outdoor living skills only a residential camp with no modern conveniences or a wilderness experience would be appropriate.

Distance is another consideration. Generally speaking, travel time and expense should be kept to a minimum. This means that nearby sites should be given first consideration. If the site is on private property, be sure to obtain permission. If it is in a provincial or national park, check with park authorities to be sure that space will be available during the time you have chosen. Be sure to

visit the site at least once before detailed planning for the outdoor environmental education experience begins.

A checklist of points to consider when selecting a site appears in Appendix C. A list of regional, provincial and national parks appears in Appendix D.

Select Resource People and Supervisory Staff

Resource people can contribute to an outdoor environmental education experience in a number of ways. They can help students better understand the natural world, teach them skills such as swimming or skiing or give instruction in natural history. Resource people should be people with knowledge and skills relating to the outdoor environment who enjoy working with children or adolescents. Their involvement will depend on the program planned and on their own time and interest. Some resource people may stay at the campsite and participate for several hours per day. Others may come for only an hour or two.

The number of supervisory staff needed in addition to the formal group leaders depends upon the age of the students and the program planned. Supervisory staff are usually volunteer parents, but they can be anybody with an interest in the program.

Some tips when selecting resource people and supervisory staff:

- choose staff with a diversity of interests, skills and training;
- involve parents;
- provide for medical attention;
- consider a balance of male and female personnel, especially for overnight trips;
- consider appropriate in-service training and orientation for resource and supervisory personnel.

Arrange for Transportation of Students

Every school board in Saskatchewan should have a policy regarding the transportation of students to approved school activities. The policy should clearly specify types of transportation which are covered by the board's insurance (and thus are approved) and the kinds which are not. The method of transportation used will be largely dictated by this policy. Refer to Chapter Six of this manual for a more detailed discussion of insurance and liability. Some common methods of transportation include:

- school or commercial buses — If school buses are used, the trip to and from the outdoor environmental education site must be scheduled so that it does not conflict with regular bus trips before and after school.
- teachers' and parents' cars — The board's insurance coverage will dictate whether or not use of private cars is a possibility. Generally, using private cars is less convenient than using a school bus because there are more opportunities for confusion, lost luggage, etc. However, private cars can be very suitable for half-day or one-day outings by secondary-level students.
- bicycles — Using bicycles is a possibility if the site is close. In most schools, however, there are a few students who, because of poverty, do not have bicycles. It is important to rent or borrow bicycles for these students so that they are not left out. Be sure to do a bicycle safety check before starting out so that bicycles don't break down during the trip.

Follow bicycle safety rules:

- Ride single-file on the right side of the road with the flow of traffic.
- Divide large groups into small groups of 6 to 10 people each supervised by a responsible person.
- Avoid riding at night.
- Generally, follow the rules of the road.

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- walking — Many sites are within walking distance. Walking is good exercise and costs nothing. Safety rules for walking include:
 - When walking on a road, walk single-file on the left side facing on-coming traffic.
 - When walking on a sidewalk, walk in pairs.
 - The number of supervisors needed is relative to the size of the group and the age of the students.
 - other types of transportation — Other means of transportation such as boats or airplanes are expensive and used infrequently. Be sure to check the school's insurance coverage if one of these types of transportation is being considered and purchase extra insurance if this is necessary.

Prepare a Budget and Arrange Financing

Some outdoor environmental education experiences cost nothing. When students walk or bicycle to a site on the school grounds or in the community and spend a day or less at the site, there is little or no cost involved. There are usually bills to pay for experiences which involve an overnight stay or bus transportation, however. In these circumstances, it is important to prepare a detailed budget when the trip is being planned.

Money may be needed for:

- rental of accommodation;
- rental of equipment such as canoes, tents, etc.;
- food;
- transportation;
- maintenance and replacement of damaged equipment;
- safety and first aid material;
- resource material — maps, books, etc.

Because outdoor environmental education is a part of the formal educational program, the board of education should assume most of the costs. Funds from other sources should be viewed as a supplement to the board's support not as a replacement for it.

Other source of funds include:

- community donations — Some businesses will donate funds as a community relations gesture.
- parents — Parents may be asked to pay some portion of their child's expenses.
- students' fundraising activities such as bottle drives, car washes, etc.

Some contributions may be in the form of goods or services. For example, some parents may donate vegetables and other foods or some may offer to loan equipment.

In every class, there will be a few children whose parents are unable or unwilling to contribute to the cost of outdoor environmental education or other school activities. These children should not be embarrassed or denied the opportunity to participate because of their personal circumstances. The school should have a contingency fund which can be used to pay for these students.

Plan the Program

When planning the activities which will be included in the program for an outdoor environmental education site consider:

- the objectives of the experience. Activities should be selected with a view to maximizing objectives;
- the opportunities presented by the site and its limitations;
- the age and interests of the students.

Outdoor environmental education activities fall into two categories — those that are a part of living sensitively in the outdoors and those which are tied to the school curriculum.

Activities related to daily living in the outdoors include cooking and cleaning up, keeping campgrounds and living accommodations clean, gathering firewood, etc. These activities can take a considerable amount of time and are valuable learning experiences in addition to their utilitarian function.

Activities tied to the school curriculum include physical education, art or music activities and activities designed to increase students' knowledge and appreciation of the natural environment.

Both of these types of activities have three stages: preparation, activity and follow-up.

Preparation begins in the classroom well before the actual outdoor environmental education experience begins. The teacher ensures that students have the background knowledge they need to benefit from their experience in the out-of-doors. A considerable amount of student planning also takes place during this preparation stage. For example, students might plan menus, select routes, decide how responsibilities will be allocated and assist in planning the daily schedule.

During the outdoor environmental education experience, students can be asked to recall information learned earlier in the classroom or to use checklists and other materials developed as part of their preliminary planning.

During follow-up the teacher uses the outdoor activities as a springboard to lead into extension and enrichment activities.

When planning the program be sure that each day's schedule includes a variety of activities. One or two

contemplative and one or two activities involving vigorous physical activity should be a part of each day's program. As well, activities should be drawn from a number of subject or interest areas.

Be sure to plan for inclement weather. If it rains or is very cold, it may be necessary to use substitute activities which take advantage of these conditions.

Planning is important but a plan should not become a straightjacket. Probably the most valuable resource in outdoor environmental education is the interest and enthusiasm of the individual teacher. Development of a program at the school or school system level must be flexible enough to allow a group of students and their teacher to break new ground and to explore their interests with a minimum of prescription and restraint.

Inform Parents and Get Their Permission and Participation

As noted earlier, parents should be involved in the planning of an outdoor environmental education experience so most parents will have information about the outing well before they receive a formal letter from the school. The letter which goes to parents should include information on:

- the objectives of the outing;
- the schedule;
- arrangements which have been made for supervision of students;
- any special highlights or features of the outing.

It is necessary to obtain parents' written consent for their child to participate in an outdoor environmental education experience. The consent form usually appears on the bottom half of the parents' letter. A sample letter, and consent form appears in Appendix E.

For outings which involve one or more overnight stays it is also necessary to ask parents to provide detailed information about their child's health. A sample health form appears in Appendix F.

When the experience involves staying one or more nights away from home, a list of clothing and supplies that each child is expected to bring is usually also sent to parents. A sample list appears in Appendix G.

Supervision and Discipline

In order to promote maximum learning and to ensure the safety of both students and teachers it is important that expectations concerning student behaviour be clear and consistent and that rules be enforced. The following are suggestions concerning discipline and supervision:

- Involve students in developing a list of expectations for their own behaviour during the outdoor environmental education experience.
- Plan every aspect of the outing in detail and keep students informed of plans. Confusion and disorganization often contribute to misbehaviour.
- Think positively concerning student behaviour. Think and expect the worst and it will likely occur.
- Treat all students with dignity. Reprimands should be delivered in private, not in front of others.
- Be flexible. Things do not always go as planned. Be prepared to adjust plans and rules to fit the occasion and surroundings.
- Do not expect a classroom type of behaviour on an outdoor experience. It will not and should not happen. Allow for more noise and movement than normal. Give the students a chance to discover, observe, experiment, but also, insist that they be responsible. Teachers may



find that reversals of student behaviour occur during an outdoor environmental education experience. Students whose feeling of confinement in the classroom leads to misbehaviour may exhibit leadership skills and a great capacity for independent learning in the out-of-doors. At the same time, students who behave well in the classroom may become troublesome in the out-or-doors where they are required to use different skills and abilities.

- Plan for rests or breaks during an activity. Younger students require more breaks than older. Break periods are needed not only for a rest or change, but often for just the opposite — a period to let loose, make some noise and burn up some energy.
- Plan and insist that students do something during an activity other than just observe (e.g., take notes, sketch, ask questions, experiment). Students should be active participants rather than passive observers.
- Where possible, involve students in conducting and leading activities. Using fellow students as leaders adds to the interest of the activity and may help to keep students under control.
- Always keep the group together and have a qualified person with each group.

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- Bus travel should be relaxed. If supervision on the bus becomes a problem:
 - Use a seating plan.
 - Arrange for entertainment — students might sing or do rhythmic clapping.
 - Assign an activity to be completed while travelling, such as watching for certain features along the way.

"Bus bingo" is an activity that students enjoy. Before the trip begins, each student makes a bingo card featuring things to watch for enroute. This activity will product the greatest learning if the items on the bingo cards are aspects of the natural or constructed environment. The completed cards are thrown into a hat and each student draws one. During the bus trip, students block out squares as they identify the various items on their cards. The first student to have all the squares blacked out is the winner.

After the Outdoor Environmental Education Experience

Look After Practical Details

- Write thank you letters to everyone who helped in any way.
- Return borrowed equipment.
- Deliver any leftover food to a food bank.
- Make sure that all suppliers of goods and services are paid.
- Consider writing a letter to parents which describes some of the events that took place during the outdoor environmental education experience and students' reactions to their experience.

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- Make a bulletin board or display of photos taken during the experience.

Evaluate the Outdoor Environmental Education Experience

After the outdoor environmental education experience, two types of interrelated evaluation are needed — evaluation of student achievement and program evaluation, that is, evaluation of the activities which made up the program during the outdoor environmental experience.

Student Evaluation

As with all other forms of evaluation, meaningful evaluation is possible only if clear and precise objectives were developed prior to the experience. Evaluation should be designed to assess the extent to which objectives have been achieved and to identify any other additional, unanticipated learning which may have taken place.

Teachers and other leaders will play a major role in evaluating student achievement. Ideally, evaluation will be continuous — based on observation of students before, during and after the activity. In particular, any improvements shown by students should be noted. Observational checklists may be a useful evaluation tool. The role of formal testing should be very limited in an outdoor situation. The exception is skill areas such as swimming, where standards have been set by agencies such as the Royal Life Saving Society and the Red Cross.

Students should participate in assessment of their own achievement as well. Students might be asked to write a report on their experience identifying all of the things they learned and all of the ways they benefited from the experience. Another approach to student self-evaluation is to develop a checklist back in the classroom a few days after their experience.

Program Evaluation

A well designed program and carefully planned activities will greatly enhance student learning and enjoyment. After the outdoor environmental experience, teachers and group leaders should critically discuss the program. "Which activities were successful and why? Which activities need improvement? Was the scheduling of activities appropriate?"

Students should participate in program evaluation as well. An evaluation form is often used to gather students' opinions. Samples of such evaluation forms are included in Appendix H.

For additional information about program evaluation refer to the *Saskatchewan School-based Program Evaluation Resource Book* published by Saskatchewan Education. Full information about this publication appears in Appendix A.

Leadership Development

One of the best ways to ensure the success of outdoor environmental education experiences is to build a pool of school and community leaders who have the energy and enthusiasm needed to organize outings as well as the knowledge and expertise to interpret the outdoors to students and to teach specific skills. Teachers, community members and students are all potential leaders. Indeed, to be successful, an outdoor environmental education experience needs leadership from all three of these groups.

University studies and other formal training can provide subject area knowledge which is very useful on any outdoor experience. Often, however, the most enthusiastic leaders are those who have participated

previously in outdoor environmental education and have experienced first-hand the amount of learning and personal growth that occurs. This is yet another reason for involving parents and community members in school outdoor experiences. Both adults and students with a commitment to outdoor environmental education can benefit greatly from attending programs offered by organizations such as *Outward Bound* or the *National Outdoor Leadership School* and from attending conferences and workshops in their local communities.

Roles which can be played by each of the three categories of leaders are outlined below.

Teachers

- take the initiative in planning and organizing;
- recruit community and student leaders;
- delegate responsibilities to other individuals;
- work with students to develop objectives for the experience;
- provide leadership and coordination during the experience;
- act as advocates for outdoor environmental education in the community.

Community Members

- act as resource people for areas requiring specialized expertise;
- act as group leaders;
- assist with planning and organization;
- act as advocates for outdoor environmental education in the community.

Students

- assist with planning and organization;
- act as group leaders;
- act as resource people for areas requiring specialized expertise;
- act as advocates for outdoor environmental education in the community;
- serve as positive role models for other students.

Chapter Four

Health and Safety

Appropriate health and safety practices protect students when they are participating in outdoor environmental education activities and also have educational value because they provide positive models for students to follow.

As noted earlier, three levels of safety should be observed during an outdoor environmental education experience:

- safety of individuals;
- safety of the environment;
- safety of equipment.

Instructors' Health and Safety Responsibilities

Before the Outing

- Obtain health information about each student before the outing. Usually this is done by sending a health form home with students for parents to complete. A sample health form is provided in Appendix F.
- Gear activities to students' capabilities.

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- Instruct students in the use of all equipment. Give them opportunities to practice and conduct proficiency tests if necessary.
 - Be sure that each student is equipped with adequate, safe, standardized equipment and with appropriate clothing and footwear for all activities.
 - Make sure that instructors and students are in adequate physical condition.
 - Anticipate things which might go wrong, from broken equipment to serious injury, and develop appropriate contingency plans.

During the Outing

- Be sure that instructors are experienced and qualified for the activities they are leading.
- Prepare a list of emergency telephone numbers and post it in several locations in a residential camp. The list should include police, ambulance, nearest hospital, location of nearest telephone, etc.
- On a wilderness trip, leave a schedule and route map with the nearest office of the R.C.M.P. or Department of Parks and Renewable Resources
- Be sure that at least one leader is qualified in first aid. A St. John Ambulance Standard First Aid Certificate, a Canadian Red Cross Standard First Aid Certificate, or a Royal Life Saving Society Aquatic Emergency Care or National Lifeguard Certificate are usually considered proof of competency in this area.
- Keep a well supplied first-aid kit handy at all times.
- Keep written records of any first aid treatments provided to students or instructors.
- Make regular health and equipment safety checks.

Sanitation

Drinking Water

Well water is usually safe for drinking and cooking. If there is any doubt, have the water tested. Avoid the use of water from lakes and rivers. It may contain a variety of contaminants including cysts which cause giardiasis (beaver fever). Water purification tablets do not destroy these cysts; therefore, if it is necessary to use lake or river water, boil the water before use. A better alternative is to haul water from a source that is known to be safe to drink. When hauling water, be sure that the container has been sanitized and is designed so that the water will not become contaminated.

Dish Washing

When students are staying at a residential camp and meals are being cooked by a volunteer or professional cook for all students, the standards and regulations specified by Chapter P-37, Regulation 3, a regulation under The Public Health Act should be followed.

Highlights of this regulations are:

- Do not use chipped or cracked dishes.
- Use a three compartment sink system to wash, rinse and sanitize dishes.
- The water in the wash and rinse sinks must be at least 44°C. Several sanitizing solutions are suitable for use in the sanitizing sink. These appear in Appendix I.
- Equipment for mechanical dish washing should conform to the National Sanitation Foundation Standards.
- For mechanical dish washing, wash water must be at least 60°C; rinse water at least 82°C.

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- People who are preparing, handling or serving food are not allowed to smoke.

Obviously, these measures will need to be modified somewhat if students are doing their own cooking in small groups. In these situations a few drops of chlorine bleach can be added to the rinse water to sanitize dishes. If any questions about sanitation occur, ask the local public health inspector.

During wilderness camping, there is the question of whether or not to use soap on dishes. Washing dishes in plain water is certainly the most environmentally-friendly option, but many people prefer to use soap because it makes cleaning up easier and gets dishes cleaner. In the wilderness, widely scatter dish washing water at least 75 metres from any water source and keep it well away from the campsite.

Toilet Facilities

In a residential camp, there should be one toilet seat for every 15 people. Handwashing facilities should be close to the toilets.



Coneflower

Swimming Safety

The swimming area should be designated and no swimmer allowed to swim beyond it without permission and then only under supervision. If swimmers of varying ability are swimming in the same area, an inner area should be designated for non-swimmers and those learning to swim. This area should be no deeper than waist deep.

The bottom of the swimming area should be solid and gradually sloping to a depth of three metres or less. Deeper water is dangerous because only trained life savers can dive deep enough to rescue a victim on the bottom.

The bottom of the swimming area should be checked for such dangers as holes, rusty cans, stumps, or sharp rocks. Those making the investigation should wear shoes and wade in slowly. Never jump or dive into unknown waters!

Before students begin swimming, the instructor should discuss with them the dangers associated with deep water, and with underwater hazards.

It is neither safe nor pleasant to swim in an area where there are weeds. These should be cleaned out.

All swimmers should observe the following guidelines:

- Swim only when a qualified swimming instructor or lifeguard is present.
- Use the buddy system. Everyone swims with a buddy and the buddies should never be further than three or four meters apart.
- Take swimming seriously. Never fool around.
- Avoid the use of buoyancy aids such as air mattresses, inner tubes, etc. They give poor swimmers a false

sense of security and may permit a good swimmer to float beyond a safe depth.

- Keep a buoyant life saving aid on shore (such as a personal flotation device) in case a reach or throw rescue must be performed.
- Contact the Royal Life Saving Society (address and phone number appears in Appendix B) for a *Water Smart* presentation before the outing.

Canoeing Safety

General Safety Requirements

- The instructor/novice ratio should be low. Novices are students who lack upper body strength and have poor ability to manoeuvre the canoe in wind or current.
- Although it is not essential that novice canoeists in a supervised situation or sheltered water be able to swim, all members of the group must wear personal flotation devices (PFDs) when they are on or near the water and the instructor must be proficient in basic life-saving techniques including artificial respiration. In more hazardous situations, swimming skill and the ability to float or tread water for a long period of time are important. Swimming tests should be given before setting out on a trip.
- Safety training should be a part of all canoeing instruction. Students should be taught how to:
 - turn around in a canoe;
 - jump out;
 - paddle various strokes;
 - enter a floating canoe off shore and in open waters;
 - right and wash out a canoe;
 - exchange places;
 - do a canoe-over-canoe rescue;
 - paddle a swamped canoe.

Before the Canoe Trip

- Tell someone the trip route.
- Wear clothing that could be taken off quickly in an emergency.
- Carry an extra paddle, a life jacket, a first aid kit, a survival kit, a canoe repair kit, a bailer tied to the gunwale or thwart, a sponge, 6 metre ropes tied both to the bow and stern and a whistle or horn.
- Never overload the canoe with passengers or duffle.
- Know the canoe, its limitations, and why it is apt to upset.
- Check weather conditions.

While on the Water

- Know your own ability and stay within its limits.
- Always remember that a canoe is not a toy to play with but is a valuable piece of equipment and a means of transportation.
- Never show off. Play it safe, especially in unknown waters.
- Do not lean out of a canoe for any reason; keep your weight centred and low.
- Always paddle close to shore. During windy conditions, paddle near the sheltered shore.
- Know the storm warnings of your area. If a storm is approaching, land on the nearest shore while conditions are still favourable.
- If out when a storm breaks, move to the centre of the canoe, sit on the bottom, and paddle.
- Never paddle near bathers.
- If upset, never leave the canoe. Right it and climb in.

Although full of water, it will sustain the weight of more than its normal load.

Selecting Safe Canoeing Equipment

When selecting equipment for canoeing it is essential that safety features take precedence over economy or style. The next major criterion should be durability and a relatively maintenance-free life. The age and ability of the user should be considered. The immediate and projected use of a canoe is also a concern for certain economies can be made if the craft is to receive limited use on sheltered waters only.

Canoe Selection

The following points should be used as guidelines in selecting safe equipment:

Size

Added length means added weight, carrying capacity and stability. Long tapered ends will give greater capacity, stability and slower speed. A 17 foot canoe is a good medium-sized canoe. In fibreglass and aluminum canoes, flotation provided by air tanks alone could be a liability. Foamed plastic is preferable.

Bottom

A round bottom gives speed but less stability. Flat bottoms give greater buoyancy, capacity and stability at the expense of speed. A keel adds stability and helps to prevent damage to the canoe.

Ends

If the ends are raised slightly higher than centre, the canoe can be turned more quickly, and a current will not grip the ends. This is important in river work. At the same time, high ends catch the wind and are a disadvantage in lake paddling.



Paddles

Paddles should be chosen to fit the size and strength of the user. They should be long enough so that when the arms are extended sideways at shoulder height, the tips of the fingers can just grip and hold the ends of the paddle.

Personal Flotation Devices (PFDs)

Personal flotation devices in a variety of sizes should be available because students vary greatly in size and weight. They must be Department of Transport approved and fit properly.

Clothing

The clothing worn should be determined by the weather. Several thin layers of clothing are preferred to one heavy layer. The air between the layers provides warmth in

cold weather. As well, layering allows students to remove or add garments as the weather changes and thus stay comfortable. Clothing should be made of wool or polypropylene. These fabrics are warm even when wet. Avoid cotton. Cotton provides little warmth, is slow to dry and is extremely cold when wet. Blue jeans are particularly bad and should not be worn for canoeing or any other outdoor sport. Shoes usually get wet when entering and leaving a canoe, so each person should have an extra pair of dry shoes.

Other Safety Precautions

Take precautions against sunburn, windburn, sunstroke, heat exhaustion and eyeburn. The soles of the feet, which are tender and are exposed when kneeling, are easily overlooked and should be covered. Hands and lips are also sensitive to the sun and should be protected with sunscreen. Do not stay out on the water too long, particularly during the heat of the day.

Cross-Country Skiing and Snowshoeing

Before the Trip

The instructor must:

- be familiar with the area and the terrain;
- know the distances and times involved for the trip;
- be aware of any difficult or hazardous parts of the trail;
- know of possible emergency routes in case of accidents or bad weather;
- have an up-to-date weather report for the area, paying special attention to the winds;

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- for longer trips, have a map and compass;
 - carry a first aid kit;
 - be sure that a responsible person who is not going along knows the plans for the trip;
 - be aware of the skill level of the individuals in the group.

The members of the group should:

- be of the same general skill level;
- be aware of their skill level and physical condition;
- check that their clothing and footwear is suitable;
- check that their equipment is in good condition;
- check that they have adequate food and additional clothing.

During the Trip

- The group should not be spread too far apart.
- The leader should head the group, setting a pace which the slowest member can maintain.
- Rest stops should be made frequently and should be of short duration.
- A responsible person should be assigned to stay at the rear of the group. A whistle could be used to communicate with the leader.
- The leader should watch for signs of fatigue or hypothermia in the group and adjust plans accordingly.
- Students should be instructed to watch for signs of frostbite on themselves and on fellow students. The first sign of frostbite is a tingling feeling, usually on the cheeks, ears or nose. Next, white, waxy patches

appear. Students with signs of frostbite should warm up by going indoors or by covering exposed skin with scarves or hats. Never rub frostbitten areas.

Footwear and Clothing

Maintaining body heat is the main requirement when selecting clothes for all outdoor activities. While the body maintains its heat during strenuous activities, the extremities lose heat rapidly. Over 40% of body heat is lost through the feet, head and hands alone. Thus boots, mitts, and hats are very important.

- Boots and shoes should be solidly constructed and waterproof. They should be large enough to accommodate two pairs of socks and leave a bit of room for the foot to move. Boots that are too tight are cold. Winter weight running shoes, anything made of rubber, or leather hiking boots are inappropriate. Students will become very cold and may suffer frostbite with these types of footwear. Cougar or Sorel winter boots are warm, although Sorels are expensive. Generally, the warmest winter boot has an interior felt pack and closes tightly at the top with a drawstring or buckle.

Two pairs of thin socks are usually warmer than one thick pair. Wool or polypropylene are preferred. Avoid cotton socks.

Hands will be warmer in mitts than in gloves. Mitts should be well-lined and waterproof. Wool mitts make good liners inside an exterior leather mitt but should not be worn alone. They are not waterproof and quickly become wet.

On cold days a ski hat which covers the ears and forehead should be worn; on warmer days a head band is more appropriate. Students should have a hat with

Several layers of light clothing are preferable to one heavy garment. Clothing should be wool or polypropylene, not cotton.

- Usually, a pair of long underwear, (made of polypropylene), medium weight trousers, a vest, shirt and sweater are all that is required to keep the body warm when actively engaged. For very cold weather, either put on an extra sweater or ski jacket, or work harder. In windy conditions, a windbreaker and wind pants help to maintain body heat. Always be prepared for wind.
- Always carry a small pack. Extra ski wax, suntan lotion, a plastic bottle of water and some snacks for the trail (nuts, dried fruit, cheese) should be taken on even the shortest trips.

In Case of Accident

- Two people should go for help - one to return with the rescue party.
- Those going for help should have a written record of the nature and location of the accident.
- After applying first aid to the victim, the leader should keep the group busy gathering wood and making a shelter.

Hiking Safety

- Be sure that packs are not too heavy. Recommended maximum pack weight for adults is 45% of body weight. Students who are still growing should carry considerably less than this. Heavy loads which are to be packed over a long distance should be carried in a framed backpack to better distribute the weight over shoulders and hips. Frameless packs are for light loads only.

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- Age, experience, type of trail, weather and fitness of the student determine distances to be walked and weight to be carried.
 - Boots should be broken in before starting off on a long trip in order to prevent blisters. Carry a small first aid kit which includes foot care components.
 - Schedule adequate stops and time them to reflect the needs of the group.
 - Use caution when going down hills.
 - Refer to the section on "Cross-country skiing and snowshoeing" for suggestions regarding clothing, footwear and safety precautions during winter hiking.



The section on swimming safety has been adapted from:
Summer camping. (n.d.). Regina: Saskatchewan
Department of Public Health. Used with permission.

Chapter Five

Eating Outdoors

Because outdoor environmental education experiences are structured in many different ways, meal planning and preparation arrangements vary considerably. Three of the most common structures for outdoor environmental education experiences are:

- the residential camp;
- the wilderness trip;
- the day trip.

Planning and preparation of meals in each of these situations differs, thus they are discussed separately in the sections which follow. There are some points which all three situations have in common, however. The first is the need for a safe, clean water supply for cooking, drinking, tooth brushing, etc. Well water is usually safe. If there is any doubt, have the well water tested. Lake and river water, even if it appears clear and fresh, can contain the cysts which cause giardiasis (beaver fever). If it is necessary to use lake or river water, boil it well; chlorine and similar purification agents don't destroy the cysts. A better alternative is to haul water in from a well that is known to contain water that is safe for drinking.

The second consideration is any dietary restrictions that students might have. Some students may have food allergies; other students' diets may be limited by

religious or cultural traditions. The health form sent home for parents' signature should ask specifically about dietary restrictions. See Appendix F for a sample of a health form.

The Residential Camp

In the residential camp there are two major ways in which food preparation can be handled:

- a professional or volunteer cook plans and prepares all meals. Students' participation is usually limited to peeling vegetables and cleaning up.
- each tent or cabin of students is responsible for planning and preparing its own meals and for cleaning up.

Meal Planning and Preparation by a Professional or Volunteer Cook

Because many residential camps have refrigerators and gas or electric stoves and because transportation of food is easy, meal preparation usually presents no special challenges. Even though students aren't preparing their own meals, such a situation has a great deal of educational potential. Meals can be planned and prepared so that the camp menu serves as a model of good nutrition and healthy eating. Some general guidelines include:

- Follow Canada's Food Guide — see Appendix J.
- Serve little or no fried food.
- Use a minimum of salt.
- Replace sweet desserts with fresh fruit, milk puddings or similar nutritious foods.
- Serve plenty of fresh fruits and vegetables, and whole grain bread and cereals.

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- Serve whole grain cereal, granola or whole wheat pancakes topped with stewed, unsweetened fruit for breakfast instead of bacon and eggs.
 - Serve raw vegetables, whole wheat bread or crackers, peanut butter or cheese for snacks instead of sweets or junk food.
 - Plan meatless menus for some meals. Pasta, lentils, beans, etc. are nutritious and inexpensive.

Meal Planning and Preparation by Work Groups

Making each tent or cabin responsible for planning and preparing its own meals provides a wonderful opportunity to incorporate instruction in nutrition, cooking and consumer education into the outdoor environmental education experience.

At least a month before the beginning of the outdoor environmental education experience, begin discussion of nutrition in class.

Emphasize:

- Canada's Food Guide;
- the importance of eating lots of whole grains and fresh fruit and vegetables;
- the need to limit fried foods, fats, sugar and salt;
- the difference between nutritious foods and junk foods.

Discuss the special circumstances created by camp cooking. This discussion will depend somewhat on whether students are cooking with a small campstove, a standard provincial park barbecue or a wood stove in a cookhouse. Generally, campstoves are preferred. They are cleaner, safer and more environmentally-friendly than either barbecues or wood fires. In the comments which follow, it is assumed that a campstove is being used and that no refrigeration is available.

Emphasize:

- ways of coping without refrigeration — Use canned fish, chicken and ham instead of fresh; plan meatless meals using pasta, vegetables, and cheese; use dried milk powder for cooking and drinking. If refrigeration is available or if it is possible to bring in fresh meat and milk every day, meal planning becomes much easier. Note: frozen meat will keep for a day or so in a cooler.
- safety precautions when cooking on a campstove — Use oven mitts; allow only one person at a time at the stove; be sure your pot has large strong handles.
- planning meals to eliminate leftovers, waste food and excess packaging.

Then ask each preorganized living group to work together. Each group is responsible for:

- preparing menus for three meals a day for the duration of their outdoor environmental education experience. Encourage students to plan simple breakfasts and lunches. Only the evening meal will require extensive preparation.

Possibilities for breakfast include:

- granola (homemade or bought) mixed with skim milk powder and hot or cold water;
- oatmeal or other cooked cereal (cereal cooks faster in a frying pan than in a pot) topped with canned applesauce;
- hearty cold cereals such as Shredded Wheat, Shreddies, etc. topped with fruit juice or reconstituted dried milk;
- cheese or peanut butter sandwiches, eaten cold or grilled in a frying pan;
- an apple, orange or grapefruit (all of which keep well without refrigeration) should always be part of breakfast. Any food left from the previous evening's meal should be eaten at breakfast to prevent waste.

Encourage students to plan sandwiches for lunch. Cheese, peanut butter and canned meat are suitable fillings. Raw vegetables such as carrot or pepper sticks, cabbage wedges or cauliflower and broccoli pieces should accompany the sandwiches.

The evening meal can be varied. Generally a one-pot meal accompanied by raw vegetables and bread is easiest for students to manage. Some possibilities include:

- chopped canned ham cooked with canned tomatoes, macaroni and finely chopped fresh vegetables;
- patties made of canned fish or corned beef, fried and served in buns;
- tuna or salmon chowder made with canned fish, dried milk and finely chopped fresh vegetables;
- potatoes baked in foil (if the stove has a baking hood), topped with grated cheese, Cheez Whiz or canned spaghetti sauce;
- spaghetti, mixed with canned sauce and chopped canned meat.

If refrigeration is available or if it is possible to bring in fresh meat every day, more variety will be possible for the evening meal. For example, there are dozens of simple one-pot dinners which use hamburger or chicken as their foundation.

Students should also include snacks and beverages in their menu. Nutritious snacks include:

- cereals such as Shreddies and Miniature Shredded Wheat;
- cold cooked cereal;
- fresh fruit and vegetables;
- dried fruit and nuts;
- whole wheat crackers, bread, etc.;

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- cold baked potato (originally baked in foil on a campstove) eaten with margarine or cheese;
 - peanut butter.

In some residential camps, the evening campfire is a tradition. Occasionally, students might like to cook snacks over their campfire. Wieners and marshmallows are traditional favourites. Other possibilities include:

- biscuit mix mixed with water, rolled thin, wrapped around the end of a stick and cooked in the fire;
- thick slices of bread, toasted in the fire on the end of a stick;
- chunks of baked potato reheated on a stick.

Beverages include:

- herbal teas — many are good cold too;
- dried powdered milk mixed with water;
- canned fruit juices — avoid individual drinking boxes as their packaging is extremely wasteful;
- hot chocolate mix mixed with hot water — use as a treat only; it contains too much sugar to drink regularly.

After they have planned their menus, groups of students should be responsible for:

- finding recipes or instructions for each dish they plan to cook. Some students may not know how to cook even basic foods like oatmeal. Students can ask their parents or look at cookbooks to get recipes or instructions for preparation of everything on their menu. Instructions can be written out and photocopied so that each group has its own cookbook.
- preparing a shopping and supplies list. Students will need to identify the quantities required for all food supplies. Some supplies will have to be purchased but staples such as salt, pepper, flour, powdered milk, etc.

can come from their parents' kitchens. They'll also have to remember non-food items such as matches, dish detergent, toilet paper, etc.

- shopping for their groceries. Comparison shopping should be part of this process. Which stores have the lowest prices; which products have the least packaging?
- organizing their food. Many groups will want to organize their food so that breakfast items are in one box and lunch items in another. The ingredients for each evening meal can also be grouped separately.
- identifying the cooking equipment they need for their menus. They will need pots and pans, cutlery, cups and plates, and a can opener as a minimum. They will also need to decide who will bring what.
- deciding how responsibilities will be shared. Ideally all jobs will be rotated so that all students have the same learning opportunities.

At the campsite, cooking and cleaning up will take a considerable amount of students' time — probably double or triple the time it would take at home. This is a normal part of learning.

The Wilderness Trip

The wilderness trip presents the same opportunities for learning about nutrition, consumer education and meal preparation as does the residential camping experience where students prepare their own food. Much of what was said in the previous section also applies to wilderness camping, however because all food has to be carried in and all garbage packed out, weight and packaging become concerns.

If the wilderness trip is only overnight, weight will be less of a problem than during a long trip because there

are few supplies to carry and many students to share the load.

Some points about meal planning and preparation during the wilderness trip include:

- Canned foods are heavy, therefore take as few as possible. Eat any you do take on the first day or two of the trip to reduce weight.
- Pack everything possible in plastic bags to reduce weight. Bags can be reused for other purposes later in the trip.
- Bagels, english muffins and pita bread are more compact than regular bread and less likely to be squashed in a pack.
- Quick cooking products such as minute rice, bulgur wheat, instant oatmeal, dried potato flakes, save time and fuel.
- Bouillon cubes, dried soup bases, pudding mix, etc., although not recommended as part of a daily diet, can provide variety to outdoor cooking.
- Herbs and spices can liven up an otherwise dull meal and take little space in the pack. Take them out of



their original containers and pack them in plastic wrap to save space.

Recipes for simple foods which can be cooked on the trail are featured in the books:

Axcell, Claudia et al. (1986). *Simple foods for the pack: The Sierra Club guide to delicious natural foods for the trail*. Rev ed. San Francisco: Sierra Club Books.

Sukey, Richard et al. (1988). *The NOLS cookery: Experience the art of outdoor cooking*. 2nd ed. Lander, WY: National Outdoor Leadership School.

Ordering addresses and other information about these books appears in Appendix A.

The Day Trip

For a day trip, students will need a lunch and perhaps a snack. For a half-day trip, only a snack is required.

Like other types of outdoor environmental education experiences, the day trip presents an opportunity to teach students the principles of good nutrition and to discuss the effect of food packaging on the environment. Students can bring lunches and snacks from home, or they can plan them in class, purchase supplies from local stores and prepare the lunches in the home economics lab.

In either case, some points to emphasize include:

- Canada's Food Guide;
- the difference between nutritious snacks such as fruit or whole wheat bread and junk food;
- using as little packaging as possible when preparing lunches or snacks. Most fruit doesn't need to be wrapped. Waxed paper is more environmentally friendly than plastic or foil wrap. Drinking boxes are

an example of very wasteful packaging and should be discouraged.

- disposing of food wrappings in ways that don't harm the environment.



Chapter Six

Legal Responsibilities

Introduction

When serious accidents occur today in school classrooms or during outdoor environmental education, legal action may be initiated by the victim or by the executor of his or her estate. If the leader (teacher) is found to be legally responsible for circumstances, action, or failure to act, that result in injury to a student, the teacher and the school board that employs him or her may be found liable under the law.

It is important that teachers and trip leaders be well informed about the legal implications related to both classroom and field trip safety otherwise they may operate in ignorance and get into trouble or let their fear of accidents unnecessarily restrict students' activities.

Both potential legal trouble and limitations to the educational program can be avoided if a few simple strategies and precautions are employed. A leader is expected to exercise a standard of care expected of a reasonable person having any special knowledge or qualifications possessed by the person.

Legal Concepts

Liability

Liability refers to legal responsibility and is based on the concept of negligence.

Negligence

Negligence is the failure to do something that should have been done or doing something improperly.

To make a case for negligence against a leader the injured party must prove that:

- there was a duty or obligation recognized by law, on the part of the defendant, requiring a certain standard of conduct;
- the defendant failed to conform to that standard;
- the actual damage or injury resulted from the leader failing to conform to the standard.

Also, when a pupil deliberately and knowingly does not obey rules or other safety procedures as instructed by the leader, if an accident does happen, then the pupil may be said to have "contributed" to his or her own accident. It is very important that the leader documents and informs students about safety procedures and rules.

Professional Qualifications

When leaders have or are held out to have special knowledge or qualifications relating to activities to be undertaken, a higher standard of care may be expected of them than would normally be expected of an ordinary reasonable person.

Self-Care and Contributory Negligence

The leader will be expected to provide a safety level that is reasonably expected of a person having or held out as having any relevant special knowledge or qualifications. Society demands that leaders or adults perceive potential dangers and hazards to children at the various age and ability levels. However, there is a reasonable standard of "self-care" expected of students relative to their age and mental/physical capabilities.

Proper training and pre-trip planning can ensure safe practises.

Other Considerations

Parental Permission

For any program that is outside the classroom setting and involves higher risk activities a permission/information form signed by the parents is essential. The form should fully inform parents and students about all the potential risks involved in the activity. Activities of this nature should not be made compulsory and parents are expected to share the responsibilities. While a written consent form does not absolve the school of responsibility, it does indicate that the student participated in the activity voluntarily. A sample consent form appears in Appendix E.

Animals and Dangerous Creatures

Leaders should be aware that Saskatchewan has a number of dangerous animals both large and small. A basic knowledge of the potential hazards and necessary precautions is important to ensure the safety of the participants, for example — seeking medical advice for an animal bite in case of rabies.



Bears are common in some parts of northern Saskatchewan and rattlesnakes in some southern areas. In these areas, special precautions must be taken. Ask a Conservation Officer or staff at a regional or provincial park for advice.

Equipment and Facilities

Leaders have a responsibility to ensure that equipment being used is in safe condition. Double check all equipment before using it and report in writing any

unsafe equipment to the administration. Equipment deemed to be hazardous should not be used under any circumstances.

While the organization that owns the campsite has a duty to ensure that the facilities are in a safe condition, it is also the leader's responsibility to visit the facility in advance and report in writing whether or not it meets the required standards and expectations.

Failure to report in writing and to take due care to avoid any unsafe condition, equipment, or facility may cause a liability suit.

Resource People and Supervisory Staff

It is the leader's responsibility to communicate with the resource people and supervisory staff, to outline their role and assigned duties, and to obtain approval from the sponsoring authority to use voluntary help. A leader who delegates tasks to someone who is not qualified may be responsible for the inadequate job of the volunteer.

Corporate Liability

If a trip or activity is sponsored by an agency or body, that agency or body may be responsible if negligence is proven. The agency, through the "master-servant" relationship, is responsible for the negligence of its employees done in the course of their employment.

First Aid Medical Treatment

The holding of a current First Aid Certificate carries with it the responsibility to exercise the level of care reasonably expected as result of that training although the Emergency Medical Aid Act, in certain circumstances, limits the liability arising from emergency first-aid rendered at the immediate scene of an accident or emergency. Prescription drugs should not be given unless written parental permission is provided. Dosages, manner of administering, intervals, etc., should be

properly recorded in writing. Before going on an outing, teachers should obtain written information about any special medical conditions that students might have.

Health and Food

The leader is responsible for ensuring adequate health practices and a well-balanced diet. Guidance and supervision of the students is important to guard against illness or other health-related problems. Precautions need to be taken against poisonous plants, food poisoning, unsafe drinking water, and insect bites. Plans may need to include medical care for diabetes or asthmatic conditions.

Transportation

Check the school division's insurance policy to be sure that students being transported in school buses are covered. Most school divisions provide this sort of coverage. This is not always the case if students are transported in rented buses or private cars. Check the policy carefully and arrange for supplementary coverage, if necessary.

Professional Supervision

Teachers, as trained professionals, are expected to be able to provide "reasonable" supervision. In the event of class or individual accident the courts may look for the following as indications that "reasonable" supervision has been provided:

- rules have been developed for the guidance of students;
- the leader was competent and was present;
- there was reasonable discipline and students behaved in an orderly fashion;
- supervisory practices had been adopted and successfully followed in the past;

-
- the leader reported any action that was illegal, e.g., drugs, alcohol.

Environmental Hazards

Whether on school property or on a remote trip, a leader must be prepared for such hazards as weather, terrain, poisonous plants, insect bites. An advance visit to the site is strongly recommended.

Leaders should be knowledgeable about weather conditions. Usually a leader is not liable when an injury occurs due to a natural phenomenon under the "Act of God" rule, but incorrect professional judgement in relation to weather hazards does not remove liability.

Equipment Liability

A leader and sponsoring authority should take reasonable steps to purchase equipment that is safe and to make sure that it is functioning properly.

Water Safety

Students should be thoroughly taught water safety procedures and precautions. For more specific guidelines on swimming and canoeing safety see the previous chapter on Health and Safety.

Suggestions to Prevent Legal Problems

- deliberately teach safety rules for each activity;
- maintain documentation that the pupils were taught and have knowledge of the safety rules;
- make sure that activity and contingency plans are well documented in writing;
- make sure that higher-risk activities are not made compulsory;

-
- have written evidence that the parent knows about and has approved in writing of the student's participation after being fully informed of the potential risks involved;
 - be sure that the school board's insurance policy covers students while they are on all school approved activities.

This chapter provides a very general outline of some areas of potential liability and is not intended or to be relied upon as legal advice. Any legal advice required by school boards and/or teachers should be obtained from their lawyers.

This chapter on legal responsibilities has been adapted from: *Beyond the classroom: A guide to outdoor education*. (1985). Winnipeg: Manitoba Education. Used with permission.



Appendix A

Instructional Materials

Note: All materials in this listing which are marked with an asterisk (*) can be borrowed from the Stewart Resource Centre, Saskatchewan Teachers' Federation, 2317 Arlington Avenue, Saskatoon, S7J 2H8.

Teacher References

Cohen, Michael J. (1988). *How nature works; Regenerating kinship with planet earth*. Toronto: Fitzhenry & Whiteside.

(Order from Fitzhenry & Whiteside, 195 Allstate Parkway, Markham, Ont., L3R 4T8.)

Cohen describes the earth as a living organism. He discusses how our separation from nature underlies most of our social ills and prevents us from experiencing earth in this way. The emphasis throughout is philosophical rather than scientific.

Cornell, Joseph. (1979). *Sharing nature with children: The classic parents' and teachers' nature awareness guidebook*. Nevada City, CA: Dawn Publications.

(Order from Dawn Publications, 14618 Tyler Foote Road, Nevada City, CA, 95959.)

Includes dozens of activities that can be used to increase children's appreciation of the natural

environment. The emphasis is on learning about nature through the spirit and the emotions rather than through the intellect.

Cornell, Joseph. (1989). *Sharing the joy of nature: Nature activities for all ages*. Nevada City, CA: Dawn Publications.

(Order from Dawn Publications, 14618 Tyler Foote Road, Nevada City, CA. 95959.)

Activities for young and old to increase understanding and appreciation of nature.

**Environmental Education: A total school program: Britannia Elementary School — (1980-81)*. (1982). Vancouver: Vancouver School Board Library Services.

A series of four curriculum guides for grades 1-7.

Grades 1-2: Environment — Seashore: Season — Spring

Grades 3-4: Environment — Forest and Fresh Water Lake: Season — Winter

Grades 5-6: Environment — Forest and Fresh Water Lake: Season — Spring

Grades 7: Recreation program

*Ferber, Mary Lou. (1979). *Nature in the city adventure guide*. Cleveland, OH: Cleveland Museum of Natural History.

Program designed to introduce city children to the natural communities in the city by means of field trips and games. Written with third to fifth grades in mind but can be adapted for any age group.

Henley, Thom. (1989). *Rediscovery: Ancient pathways — new directions: A guidebook to outdoor education*.

Vancouver: Western Canada Wilderness Committee.

(Order from Western Canada Wilderness Committee, 20 Water St., Vancouver, B.C., V6B 1A4.)

Rediscovery is an international network of camps for native and non-native youth that focuses on personal, cultural and environmental awareness. The Rediscovery program draws heavily from the traditions of Canada's west coast Indian peoples. The book contains many suggestions for activities that will enhance traditional values and increase students' ability to live in harmony with nature and with each other.

Hosking, Neville. (1978). *Outdoor activities handbook for elementary schools (K-6)*. Manuscript.

(May be purchased from the Teaching Materials Centre, Stewart Resources Centre, Saskatchewan Teachers' Federation, 2317 Arlington Ave., Saskatoon, S7J 2H8.)

The aim of this handbook is to provide teachers with a wide variety of outdoor activities suitable for children in elementary schools (K-6). From the selection of activities presented, teachers will be able to choose those specific learning experiences which will support and enrich classroom learning.

*McCormack, Alan J. (1979). (Compiler and editor). *Outdoor areas as learning laboratories: CESI sourcebook*. Columbus, OH: ERIC.

A collection of kid-tested outdoor activities divided into sections on animal study, plant study, ecology, physical sciences and interdisciplinary activities. Suitable for elementary to junior high students.

Meewasin meanderings: Poking around in parks and playgrounds. (1982). Saskatoon: Saskatoon Board of Education and Meewasin Valley Authority.

(May be purchased from the Teaching Materials Centre, Stewart Resource Centre, Saskatchewan Teachers' Federation, 2317 Arlington Ave., Saskatoon, S7J 2H8.)

This booklet provides many good ideas for outdoor experiences with children and helpful organizational aids for teachers. The activities are not specific to the Saskatoon area.

Murawsky, Vlademir H. (1987). *Potholes and ponds: A pond study guide for elementary school children*.

Humboldt, Sask. (published by the author).

(Order from the author at R.R. 2 5ZC42, Gibson's, B.C., V0N 1V0.)

Ideas to help elementary children learn about the flora and fauna that live in ponds.

**Operation lifeline activity book*. (1986). Toronto: World Wildlife Fund Canada.

Guidebook of activities designed to help teachers show students how they can help endangered species in Canada and around the world. The skills index shows skills emphasized in each activity (science, research, language, visual arts, social science, mapping, graphing, math, outdoors, reporting, history and geography, music, drama and physical education.)

*Redleaf, Rhoda. (1983). *Open the door — let's explore: Neighbourhood field trips for young children*. St. Paul, MN: Toys' n Things Press.

Each field trip includes lists of introductory and follow-up activities. Vocabulary that could be associated with the field trip is given as well as finger plays and songs. Primary level.

*Rockwell, Robert E; Sherwood, Elizabeth A.; and Williams, Robert A. (1983). *Hug a tree and other things to do outdoors with young children*. Mt. Rainier, MY: Gryphon House.

Contains numerous activities to help young children learn to appreciate nature. Each activity has a suggested age level, a clear description of what will

be done, and suggestions for follow-up. Emphasis is placed on using the natural environment for learning language, and spatial and mathematical relationships.

Saskatchewan school-based program evaluation resource book. (1989). Revised Edition. Regina: Saskatchewan Education.

(One copy was distributed to all schools in the province. For additional copies contact Saskatchewan Education, 1855 Victoria Ave., Regina, S4P 3V5.)

A very comprehensive guide to evaluating educational programs. Guidelines for planning and doing an evaluation are provided and there is detailed information on data collection methods and evaluation models.

*Saskatchewan Valley School Division. (1986). *Welcome to environment education: A unit designed for grade eight in the welcome to our world project.* Warman, Sask.: Saskatchewan Valley School Division.

A comprehensive binder which has numerous activities designed to point out the environmental problems facing the planet and suggest alternatives to some of our present practices.

State University of New York, College of Environmental Science and Forestry, and Centre for Environment Education, Nehru Foundation for Development. (1990). *Essential learnings in environmental education: A data base for building activities and programs.* Troy, OH: The North American Association for Environmental Education.

(Order from The North American Association for Environmental Education, P.O. Box 400, Troy, Ohio 45373.)

Essential Learnings provides a comprehensive listing of concepts basic to environmental education.

Concepts are grouped into categories and subcategories. This book will be invaluable when establishing the educational objectives for an outdoor environmental education experience.

- *Stoker, Dan. (1980). *Monsters and mini-beasts one: Combining language with nature study*. Waterdown, Ont.: (published by the author).

A booklet intended for teachers of elementary children who are novices to outdoor environmental education. Numerous activities provided for teaching about nature through language experiences.

- World Commission on Environment and Development (1987). *Our common future*. Oxford: Oxford University Press.

(Order from Oxford University Press, 70 Wynford Drive, Don Mills, Ont., M3C 1J9.)

The World Commission on Environment and Development was established in 1983 by the United Nations. In this report of its findings, the Commission emphasizes that there must be closer ties between environment and ecology and that governments must take responsibility not just for environmental damage but also for the policies that cause the damage.

Student and Teacher References

- Axccl, Claudia et al. (1986). *Simple foods for the pack: The Sierra Club guide to delicious natural foods for the trail*. Revised Edition. San Francisco: Sierra Club Books.

(Order from Douglas and McIntyre, 1615 Venables St., Vancouver, B.C., V5L 2H1.)

A compilation of recipes for dishes that are suitable for wilderness hiking. Sample menus for a ten-day and a weekend trip are included.

Blakely, Andy and Drinkwater, Suzanne. (1990). *The look out book: A child's guide to water safety*. Toronto: Published by Macmillan of Canada for the Royal Life Saving Society Canada.

(Available from Macmillan of Canada, 29 Birch Ave., Toronto, Ont., M4V 1E2.)

Bright, amusing cartoon illustrations are used to introduce children aged 5 to 8 to the basic rules of water safety. Throughout, questions about water safety are posed by the cartoon character "Beeper". Answers are given on the last page.

Caduto, Michael J. and Bruchac, Joseph. (1989). *Keepers of the earth: Native stories and environmental activities for children*. Saskatoon: Fifth House.

(Order from Saskatchewan Book Bureau, 1308 Winnipeg Street, Regina, S4R 1J6. Order # 5841. Teacher's guide — order #5927.)

Features a collection of North American Indian stories and related hands-on activities designed to inspire children — ages 5 to 12 — to help them feel a part of their surroundings. Activities are interdisciplinary and discovery-oriented.

Intended to provoke curiosity among children, each activity facilitates a discovery of the environment and helps children understand the influence they have on their surroundings.

Gilroy, Doug. (1985). *Prairie wildlife: The best of Doug Gilroy's nature photography*. Saskatoon: Western Producer Prairie Books.

(Order from Western Producer Prairie Books, P.O. Box 2500, 2310 Millar Avenue, Saskatoon, S7K 2C4.)

Magnificent photographs of prairie wildlife.

The great Saskatchewan vacation book. (Annual). Regina: Saskatchewan Economic Diversification and Trade.
(Available free from Tourism Saskatchewan, 1919 Saskatchewan Drive, Regina, S4P 3V7.)

This annual publication is written specifically for tourists to Saskatchewan but will be useful to students and teachers as well. The main body of the booklet is a listing of summer events throughout Saskatchewan. Brief descriptions of Saskatchewan's cities, provincial and regional parks are provided along with basic information about Saskatchewan.

Hampton, Bruce and Cole, David. (1988). *Soft paths: How to enjoy the wilderness without harming it.* Harrisburg, PA: Stackpole Books for the National Outdoor Leadership School.
(Order from NOLS Publications, Box AA, Lander, WY 82520.)

A handbook which describes minimum-impact wilderness camping techniques. Basic topics such as campsites, fires and stoves, and sanitation are covered. In addition, there are chapters on special environments such as rivers and lakes, and snow and ice. The handbook is written for adult campers, thus the information it provides may need to be modified for a school group. Nevertheless, it is good background reading for both teachers and students.

Hirschi, Ron. (1989). *Who lives on the prairie?* New York: G.P. Putnam's Sons.
(Order from Benjo Sales, 7050B Bramalea Road, Unit 52, Mississauga, Ont. L5S 1S9.)

Photos of animals that live on the prairie with very simple text. Suitable for independent reading in grades one and two or for reading aloud to preschoolers.

Landscapes: A guide to the landforms and ecology of southern Saskatchewan. (1980). Regina: Saskatchewan Environment.

(Booklets may be ordered from and slides borrowed from Public Affairs Branch, Saskatchewan Environment and Public Safety, 3085 Albert Street, Regina, Saskatchewan, S4S 0B1.)

Includes seven booklets on different southern Saskatchewan landforms: high relief terrains, flood plains, dry lands, marshes — fresh and saline, sand dunes, low relief terrain, and coulees and river valleys. A reference manual is also available. Slide sets which duplicate the photographs in the booklets are available for loan.

Martin, Claudine. (1989). *The trekking chef: Gourmet recipes for the great outdoors.* New York: Lyons & Burford.

(Order from Western Producer Prairie Books, P.O. Box 2500, 2310 Millar Avenue, Saskatoon, S7K 2C4.)

Over 100 recipes with a touch of haute cuisine for life outdoors, avoiding the standard staples of freeze-dried, smoked, and processed food.

McMorris, Bill and McMorris, Jo. (1989). *Camp cooking: A backpacker's pocket guide.* New York: Lyons & Burford.

(Order from Western Producer Prairie Books, P.O. Box 2500, 2310 Millar Avenue, Saskatoon, S7K 2C4.)

A host of lightweight, nutritious, quick-cooking fare for simple camp stoves, accompanied by thorough advice on the choice of equipment, from the editor-in-chief of *Boy's Life*, the magazine of the Boy Scouts of America, and his wife.

*Miller, Christina G. and Berry, Louise A. (1986). *Acid rain: A sourcebook for young people*. New York: Julian Messner.

Presents the causes and effects of acid rain and includes experiments which show the scientific principles involved in acid rain.

Sukey, Richard et al. (1988). *The NOLS cookery: Experience the art of outdoor cooking*. 2nd ed. Lander, WY: National Outdoor Leadership School.
(Order from NOLS Publications, Box AA, Lander, WY 82520.)

Written for wilderness hikers, this handbook includes sections on meal planning, and cooking out-of-doors as well as recipes for dishes which can be easily prepared while on the trail. The emphasis is on light-weight, nutritious foods that don't need refrigeration.

Vance, F.R., Jowsey, J.R., and McLean, J.S. (1984). *Wildflowers across the prairies*. Saskatoon: Western Producer Prairie Books.
(Order from Western Producer Prairie Books, P.O. Box 2500, 2310 Millar Avenue, Saskatoon, S7K 2C4.)
An authoritative book on western wildflowers, complete with 654 colour photographs and details of 280 prairie plants.

Audiovisual Materials

National Film Board Films

All of the films listed below may be rented from the National Film Board, 424 - 21 Street E., Saskatoon, S7K 0C2. Telephone (306) 975-4245 or call toll free 1-800-661-9867.

Order Number

Edge of Ice (55:33)

0186 069

An impressive documentary on the nature of Arctic sea-ice and its crucial importance to life in the far north.

The Energy Carol (10:33)

0175 746

This animated spoof of *A Christmas Carol* traces the momentous transformation of Ebenezer Stooze as his motto changes from "to waste is to grow" to the conservation-conscious "back to basics."

Estuary (11:30)

0179 174

A short documentary showing the ecology, environmental function and natural forces that control estuaries.

The Forest in Crisis (21:20)

0181 010

This film documents the use and misuse of forest resources in northern Ontario, and the efforts of government and industry to find better ways to grow a second forest.

For Future Generations (54:14)

0185 652

The film deals with the historic roots of the conservationist ethic that led to national park systems around the world, while tracing the growth of the Canadian park system and changing attitudes toward conservation.

Land Above the Trees (19:25) 0188 013

With superb photography, this film shows how some plants and animals have adapted to the harsh environmental conditions that exist above the tree line in the Canadian alpine zone.

Return of the Swift Fox (26:31) C0188 035

An experiment is underway to reintroduce the Swift Fox to the grasslands region of southern Alberta and Saskatchewan. Formerly at home in the grasslands, this tiny fox disappeared from the short-grass prairie some fifty years ago. Captive-bred Swift Foxes are now being released in the region in the hope of re-establishing a self-sustaining population.

A Time for Action (9:53) 0183 535

A short documentary designed to inform the public of the urgent need for safe and effective methods of tracking, treating and disposing of or storing hazardous waste.

Wild in the City (16:12) 0185 039

This film looks at how some animals — from cormorants to coyotes — have adapted to life in Vancouver, despite the concrete, traffic, and throngs of people.

Annotations for NFB films from: *Green videos from the National Film Board of Canada* (1990). Montreal: National Film Board of Canada. Used with permission.

Media House Materials

Films, videotapes, media kits and audio programs may be borrowed from Media House Productions (formerly the Educational Resources Distribution Branch of Saskatchewan Education.)

Duplicates can be obtained of many of the videotapes, audiotapes and films in the collection as well.

The *Media House Catalogue* lists more than a hundred titles under the heading "Ecology". Subject headings such as "Environment", "Erosion" and "Animals" direct the user to additional titles which would be relevant to an outdoor environmental education experience.

All schools in the province have received a *Media House Catalogue*. For additional copies or further information contact:

Media House Productions, 1308 Winnipeg Street,
Regina, Saskatchewan, S4R 1J8.

Telephone: (306) 787-5100

To order materials phone: Dial-A-Film

Toll free 1-800-667-7547 (provincial)

Regina 352-1970

Materials from Other Sources

Barren ground caribou — Schools' program (Kit) (n.d.)

Produced by the Beverly and Kaminuriak Caribou Management Board in collaboration with Local School Authorities.

(Kit may be borrowed from: Lizabeth Nichols, Education and Extension Coordinator, Saskatchewan Parks and Renewable Resources, 3211 Albert St., Regina, S4S 5W6 or from Tim Trottier, Regional Wildlife Specialist, Saskatchewan Parks & Renewable Resources, Wildlife Branch, Box 5000, LaRonge, Saskatchewan, S0J 1L0, telephone: 425-4237.)

The barren ground caribou — Schools' program aims to prepare children to take a well-informed, articulate and constructive role in the issue of caribou management during their adult lives. The program accepts the premise that the barren ground caribou herds are a renewable resource that must be maintained to support the cultural and economic vitality of the Aboriginal peoples of the caribou ranges as they have done for centuries. At the same

time, it recognizes the interests other Canadians have in the preservation of the herds as a national treasure.

The kit includes four units each covering a different aspect of the caribou. Each unit is packaged separately and includes a teachers' guide, unit review tests, student materials, videotapes and other audiovisual materials, and supplementary learning materials such as games and puzzles.

The student materials are written at three different reading levels, spanning grades four to nine. The resource materials have been used effectively by teachers to supplement the K-12 curriculum.

Inservice workshops are made available to all teachers who borrow the kit.

Project WILD: for additional information about this program and the accompanying book refer to Appendix B of this document.

Provincial park kits. (various dates). Regina:

Saskatchewan Parks & Renewable Resources.

(Kits are available in Cypress Hills, Duck Mountain, Moose Mountain and Makwa Lake Provincial Parks and in the Regina office of Saskatchewan Parks and Renewable Resources)

Each kit contains three activities that students and teachers can do to learn more about winter and the environment. A winter series of kits has been developed and work is beginning on a summer series of educational programs. Most of the activities require advance preparation so teachers should book the kit in advance of their planned park visit.

Appendix B

Community Organizations and Programs

Canadian Parks and Wilderness Society, Prairie Chapter.

Box 914, Saskatoon, S7K 3M4

Contact: Merv Hey, 249-0040

Conservation is promoted by public education and lobbying of government about parks and wildlands issues in Saskatchewan. Nationally, the organization looks at broader political, planning and legislative questions about parks and wildlands. A periodical called *Borealis* is published by the National office.

Canadian Red Cross

2571 Broad Street, Regina, S4P 3B4

Contact: Water Safety Division, 352-4601

The Red Cross establishes standards and awards certificates for various levels of competency in swimming and lifeguarding. It also sets up swimming and lifeguarding lessons.

Canadian Ski Patrol - Saskatchewan Division.

Box 394, Regina, S4P 3A2

Contact: Gord Jooristy
3018 Reves Road
Regina, 584-8833 (business)
789-0528 (home)

The Canadian Ski Patrol is made up of volunteers to patrol alpine and nordic skiing areas offering first aid assistance when needed. The Ski Patrol also conducts and produces educational materials relating to all aspects of skiing.

Canadian Wildlife Service.

115 Perimeter Road, Saskatoon, S7N 0X4

Contact: Gerald (Jerry) Beyersberger
975-5066 or 975-4087

Promotes specific events such as national Wildlife Week and Environment Week. Will make classroom presentations if time permits. Some videos and information brochures available.

Chinook Parkway Board.

Box 340, Swift Current, S9H 3V1

Contact: Vern Desmet, 778-2777

This is an urban park authority, interested in general environmental concerns, particularly land use and park issues.

Ducks Unlimited (Saskatchewan).

1606 - 4th Avenue, Regina, S4P 3W7

Contact: Robert MacFarland, 569-0424

Doug Chekay, 569-0424

Restoration, preservation and creation of prime breeding habitat for water fowl and other wetland

wildlife are the main activities of Ducks Unlimited. Through three magazines (*Ducks Unlimited*, *Conservator and Duck Tails*) and public dinners, meetings and events, public education and fundraising are achieved. Project activities are undertaken which fulfill organizational goals. There are offices in Yorkton, Melfort, North Battleford, Regina (2), Swift Current, Cumberland House and Meadow Lake.

Meewasin Valley Authority.

402 - 3rd Avenue S, Saskatoon, S7K 3G5

Contact: Glen Grismer, 665-6887 (w), 374-7940 (h)

Susan Lamb 665-6887

Meewasin runs interpretive centres and programs in Saskatoon, and focuses on conservation, education and park development. Will conduct workshops for teachers or make presentations to school groups. Sells a resource and activity binder designed for schools and has a newsletter and slide show available.

Moose Jaw Wild Animal Park.

P.O. Box 370, Sub No. 1, Moose Jaw, S6H 5V0

Contact: Curt Schroeder, 691-0111

Provides workbooks and information sheets to school and youth groups visiting the park.

Museum of Natural History.

Wascana Park, Regina, S4P 3V7

Contact: Peggy Brunson, 787-9054

Has an in-house program which features:

- guided tours;
- teacher workshops;
- publications;

- films;
- laboratories;
- hands-on presentation;
- summer schools;
- resource kits;
- Megamunch clubs.

Multi-media kit/ideas/films available for return shipping costs, teacher guides/posters/other print materials mailed out to all schools in province on a regular basis and available to individual teachers on request. Newsletter bi-monthly for Megamunch Club cost \$10.00 per year per child.

Delivers teacher workshops as requested in rural areas and holds regular workshops every October and January in Regina.

Prairie Farm Rehabilitation Association (PFRA).

Soil Conservation Planning Section

1901 Victoria Avenue, Regina, S4P 0R5

Contact: John Lancaster, 780-6271 (phone)
780-5018 (fax)

Provides soil conservation awareness for the general public, farmers and school students. Distributes educational materials in English and French including *SNOOP* (K-3), *Soil Grows Food* (Grades 4-6), *Soil Science and Land Use* (Grades 7-10). As well, videos, film and video lists, and a variety of miscellaneous publications are available.

Prince Albert National Park.

Box 100, Waskesiu Lake, S0J 2Y0

Contact: Merv Syroteuk, 663-5322 or 663-5367

Has an extensive, year-round interpretive program designed to teach students and adults about people's

dependence on the natural environment, specific natural and cultural features of the park and the role of the national parks. Upon request, the park will run inservice training sessions for teachers on using the park as a learning environment. An *Edu-kit* with teacher's resource guide, park features guide, video program, wildlife roles, maps, and pamphlets may be borrowed by teachers free of charge. General park information brochures are available free of charge and a variety of activity books, posters, etc. may be purchased in the park bookshop. Book programs at least three months ahead.

Project WILD.

Contact: Lizabeth Nicholls
Education and Extension Coordinator
Parks and Renewable Resources
3211 Albert Street
Regina, S4S 5W6
Telephone: 787-5242

Project WILD is a supplementary, interdisciplinary environment and conservation education program for teachers. It is a way that teachers can incorporate concepts related to people, wildlife and a healthy environment into all major school subjects. The Canadian Wildlife Federation is its principal sponsor in Canada. The program has two components — workshops and an activity guide. The workshops are designed to explain the philosophy of the program and to show how the activities can be integrated into existing curricula. The Project WILD activity guide is given free to every teacher who participates in a workshop. It contains lesson plans for classroom activities which will heighten students' awareness of and appreciation for the natural environment.

Project WILD has been tested as a recommended resource for the kindergarten to grade six science curriculum.

Royal Life Saving Society.

Contact: Brian Holaday, 780-9200
2205 Victoria Avenue
Regina, Saskatchewan S4P 0S4

The mission of the Royal Life Saving Society is to provide education in the areas of lifesaving and lifeguarding. It establishes standards, awards certificates for various levels of competency and gives lessons on lifeguarding and lifesaving.

The RLSS's "Water Smart" program will be of particular interest to schools. Volunteers in a number of Saskatchewan centres have been specially trained for this program. They are willing to make school visits to talk to students of all ages about water safety. Contact the Regina office to get the name and phone number of the volunteer in your area.

Saskatchewan Eco-Network.

#205 - 219 - 22nd Street East, Saskatoon, S7K 0G4

Contact: Office, 665-1915

Lynn Brown, 665-8973

This umbrella agency for Saskatchewan's environmental groups maintains contact between environmental groups through the publication of a newsletter, *The Green Leaf*, and an annual conference. As a member of the Canadian Environmental Network, the Saskatchewan Eco-Network keeps local environmentalists informed of activities in other provinces, territories and in Ottawa. It establishes a contact point for coalition-building with other sectors either provincially or nationally.

Saskatchewan Environmental Society.

Box 1372, Saskatoon, S7K 3N9

Contact: Ann Coxworth, 343-9281

Bert Weichel, 664-2980

Resource Centre, 665-1915

Exists to identify environmental issues of concern to Saskatchewan people and to encourage responsible action on these issues. Major interests include energy efficiency, recycling, pesticides and water issues. Activities are primarily related to educational and informational programming and related research. Issue backgrounders are produced and available from SES, which houses a resource collection in its office. A newsletter is published monthly. Does school visits upon request.

Saskatchewan Natural History Society.

Box 4348, Regina, S4P 3W6

Contact: Lloyd Saul, 343-1417 (Saskatoon)

Curt Schroeder, 780-9273 (Regina)

This group exists to foster active interest in all branches of nature study, discussion and a focus for action on environmental issues. Field trips, general research, habitat conservation projects, endangered species recovery projects and educational conferences are past activities of this group. A periodical called the *Blue Jay* is published quarterly and is available at a reduced rate to schools. The society has a mail order bookshop. Local societies include Regina, Saskatoon, Fort Qu'Appelle, Melfort, Indian Head, Moose Jaw, Prince Albert, Weyburn, Hudson Bay and Yorkton.

**Saskatchewan Outdoor and Environmental
Education Association (SOEEA)**

Contact: Linda Dodd
66 Michener Drive
Regina, S4V 0L7

SOEEA's purpose is to foster the growth of outdoor and environmental education in Saskatchewan by developing an awareness and understanding of human interaction with environments and encouraging an environmentally sound lifestyle. The group publishes a quarterly newsletter, *Envisage*, and holds conferences, seminars and workshops. In addition, it promotes awareness of environmental education issues and represents its members' views on such matters.

**Saskatchewan Parks and Renewable Resources,
Forest Fire Management Branch.**

Prince Albert, S6V 6G1

Contact: Forest Fire Management Branch, 953-3473

Makes classroom presentations on forest fire prevention and on the role that forest fires play in nature. One coordinator, two "bears" and local conservation officers at each classroom visit. "Smokey Bear" is also available for public appearances April to October. Posters, buttons, pencils and biodegradable litter bags are available free of charge.

**Saskatchewan Parks and Renewable Resources,
Forestry Branch.**

Box 3003, Prince Albert, S6V 6G1

Contact: Information Officer, 953-2227 (for class presentations)

P.A. Tree Nursery, 953-3425; Big River
Nursery 469-2180 (for tree nursery tours)

Distributes general information publications on forestry, gives tours of the tree nursery and makes class presentation upon request and availability of staff.

Saskatoon Regional Zoological Society.

Box 8755, Saskatoon, S7K 6S5

Contact: Melanie Elliott, 652-5016

Claire Bullaro, 373-1787

Endeavors to communicate knowledge and appreciation of animal life through interpretive programs provided by tour guides, children's zoo volunteers and "ask-me" volunteers who answer questions about the animals and zoo. Produces educational publications such as the *Zoo Guide* and *Zoo News*, the society's newsletter. Advocates on behalf of the Forestry Farm Zoo. Recent activities have included a pilot-plant recycling glass in Saskatoon in conjunction with Cosmopolitan Industries.

Saskatchewan Soil Conservation Association.

Room 132, 3085 Albert Street, Regina, S4S 0B1

Contact: Nancy Fraser, 787-0558

Encourages soil conservation by promoting agricultural practices which reduce soil degradation and maintain economic viability. Most programs are directed toward agricultural producers with teachers and students as a secondary audience. Produces a media kit each year for soil conservation week and various information pamphlets.

Saskatchewan Wildlife Federation.

Box 788, Moose Jaw, S6H 4P5

Contact: Ed Begin, 692-7772

Derrek Stanley, 873-5472

David Stuart, 397-2727

The SWF advocates the preservation of habitat for all species of fish and wildlife. Major activities include hunter education and outdoor environmental education. There are 135 branches organized into 6 regions throughout the province.

**Sierra Club of Western Canada,
Saskatchewan Chapter.**

Box 6637, Regina, S4P 3H9

Contact: Catherine Christy, 757-1099

Ken Kelln, 731-2654

Conservation and outdoor recreation are the main interests of this group. It is part of the Western Canada chapter of the international organization. Much of the work of the chapter relates to South Moresby and to farm chemicals in the environment.

Wakamow Valley.

Box 1266, Moose Jaw, S6H 4P9

Contact: Doug Cole, 692-2717

A 25-year phased-in project that coordinates the planning, use, development, protection, maintenance and improvement of public lands in the Moose Jaw River valley area. Has kits available for each grade level relevant to the valley area and offers inservice to teachers on the use of these kits. Also assists with science fairs and projects, makes presentations to educators and students and provides facilitators for Project WILD.

Wascana Centre Authority.

2900 Wascana Drive, Regina, S4P 3S7

Contact: 522-3661

Coordinates the planning, use, development, protection, maintenance and improvement of public lands in Regina's Wascana Park. Included in the park is a wildlife refuge and native creek habitat open for interpretation with guidance from a Park Naturalist.

Wild Fur Resources Presentation.

Contact: A conservation officer at the nearest Saskatchewan Parks and Renewable Resources Office.

The program takes the approach that fur-bearing animals are a renewable resource and that the excess population may be harvested for commercial purposes.

A multi-media *Wild Fur Resources* kit is used by the Conservation Officer or Wildlife Biologist to present up-to-date information about Saskatchewan's wild fur bearing animals and the fur industry. The presenter also explains Saskatchewan's historic role in the Canadian fur trade. Presentation will be particularly useful in northern Saskatchewan where trapping is an important part of the local economy. In the southern part of the province, teachers should use it with discretion because of the sensitivities associated with trapping and the fur industry.

Note: The information in the Appendix is taken from:

CUSO directory of environment and development NGOs in Saskatchewan. (n.d.). Regina: CUSO. Used with permission.

and

Directory of conservation education programs. (1990). Regina: Saskatchewan Parks and Renewable Resources. Used with permission.

Appendix C

Site Selection Checklist

Environmental impact and educational relevance should be the primary considerations when selecting a site for an outdoor environmental education experience. The questions below relate to the educational aspects of the site.

The Physical Features of the Site

- Is there a variety of wildlife including birds, insects, reptiles as well as mammals?
- Is there a variety of trees and plants?
- Are there land formations or geological formations of particular interest?
- Are there areas which show the effects of erosion - river banks, gullies, silt-laden streams, etc.?
- Is there forest, grassland and/or wetland?
- Is there a river or a lake?

The Cultural Features of the Site

- Is there a historic site nearby? Historic sites can include trading posts, R.C.M.P. forts, buffalo jumps, etc.
- Does the site have an interpretive naturalist program or guide service?

The Aesthetic Features of the Site

- What opportunities does the site offer for sketching, painting, photography?
- How can the site be used to help children appreciate nature's beauty?

The Recreation Features of the Site

- Does the site offer opportunities for cross-country skiing, snowshoeing, canoeing, swimming, etc.?

Appendix D

Saskatchewan's Parks

Saskatchewan's regional, provincial and national parks are listed below.

For more information about regional or provincial parks contact:

Saskatchewan Parks & Renewable Resources
(306) 787-2700

or

Tourism Saskatchewan
Toll Free: 1-800-667-7538 in Saskatchewan
1-800-667-7191 in Canada and U.S.
787-2300 in Regina

Regional Parks

Antelope Lake	Canwood	Dunnet
Assiniboia	Carlton Trail	Eagle Creek
Atton's Lake	Ceylon	Elrose
Bengough	Clair Lake	Emerald Lake
Big Beaver	Clear Lake	Esterhazy
Big River	Clearwater Lake	Eston Riverside
Biggar	Craik & District	Fishing Lake
Bow Valley	Crystal Beach	Glenburn
Brightsand Lake	Dr. Mainprize	Grenfell
Cabri	Duck Mountain	Hazlet

Herbert Ferry	Melville	Silver Lake
Hudson Bay	Memorial Lake	St. Brieux
Ituna	Meota	Struthers Lake
Jean Louis	Moosomin	Sturgeon Lake
Legare	Morin Lake	Sturgis & District
Kemoca	Nickle Lake	Suffern Lake
Kindersley	Nipawin	Sylvan Valley
Kipabiskau	Notukeu	Table Mountain
Lac Pelletier	Ogema	Thomson Lake
Lake Charron	Oro Lake	Tisdale & District
Langham &	Oungre Memorial	Tramping Lake
District	Outlook	Unity
Last Mountain	Oyama	Val'ey
Lemsford Ferry	Palliser	Wakaw Lake
Leroy Leisure	Pasquia	Waldsea Lake
Land	Pine Creek	Wapiti Valley
Little Loon	Prairie Lake	Welwyn
Lucien Lake	Radville Laurier	Centennial
Macklin Lake	Redberry Lake	West Central
Manitou	Rockin Beach	Whitesand
Martin's Lake	Saltcoats	Wilkie
McLaren Lake	Sandy Beach	Wood Mountain
McNab	Lake	Woodlawn
Meadow Lake	Saskatchewan	Wynyard
Meeting Lake	Beach	York Lake
Melfort & District	Shamrock	

Provincial Parks

Blackstrap	Cypress Hills	Katepwa Point
Buffalo Pound	Danielson	Lac La Ronge
Candle Lake	Douglas	Last Mountain
Cannington	Duck Mountain	House
Manor	Echo Valley	Makwa Lake
Clearwater River	Fort Pitt	Meadow Lake
Crooked Lake	Fort Carlton	Moose Mountain
Cumberland	Good Spirit Lake	Nipawin
House	Greenwater Lake	Pike Lake

Rowan's Ravine
Saskatchewan
Landing
St. Victor's
Petroglyphs

Steele Narrows
The Battlefords
Touchwood Hills
Post

Wood Mountain
Post

National Parks

Prince Albert National Park, Box 100, Waskesiu Lake,
S0J 2Y0

Grasslands National Park, Box 150, Val Marie, S0N 2T0

Appendix E

Sample Parent Letter and Consent Form

Springfield Road Public School

September 23, 19____

Dear Parents:

We have planned a field trip to Rowan's Ravine Provincial Park on Monday, October ____, 19____.

The aim of this out-of-school experience is to study animal and plant life in a natural setting.

The children will be divided in groups of six, each supervised by a parent. They will leave by bus at 9:00 a.m. and will return to school at 11:45 a.m. Our sincere thanks to the parents who volunteered to assist on this outing.

Please cut off the consent form below and have your child return to the school. Please feel free to call me if you have any further questions.

Sincerely,

Mrs. Oughton

Consent Form

My son/daughter _____
(name)

has my permission to participate in a field trip to
Rowan's Ravine Provincial Park on _____,
October ____, 19__.

(Signature of Parent)

Appendix F

Sample Health Form

Please fill in this information as accurately as you can for your son or daughter. It will be confidential and will be used with discretion by the staff at the Outdoor School.

Pupil's name _____

Age _____

Address _____

Telephone _____

Name of parent or guardian _____

Address _____

Will parent be at home while child is at camp? Yes No

If no, address at which parent can be reached: _____

Telephone _____

If parent cannot be reached, give name and address of responsible person:

Name _____

Address _____

Telephone _____

Name of family doctor _____

Telephone _____

Saskatchewan Health Services number _____

Other medical insurance numbers:

G.M.S. _____

Blue Cross _____

Does your child have a chronic disease or condition such as diabetes, epilepsy, heart trouble, etc.? _____

List any medicines taken _____

Date of your child's last tetanus injection _____

Does your child have any nervous habits or particular fears? _____

Has your child recently had an illness, an injury or surgery? _____

Are there any camp activities in which your child cannot participate? Please give reasons _____

Are there any foods that your child cannot eat because of allergies, or religious or cultural tradition? _____

Does your child have asthma or hay fever, or an allergy to any drugs? _____

We will try to contact parents in case of emergency. If contact cannot be made, the child will be taken to the nearest medical treatment facility.

I agree that medical treatment may be given to my child in case of accident.

Signature of parent/guardian

Date _____

Appendix G

Sample Clothing List

Several thin layers of clothing are preferable to one heavy layer. Some garments should be wool or polypropylene, because cotton is cold and has a chilling effect when wet. Clothing for a four-day residential camping experience includes:

Clothing

- sleeping bag (pillow optional) plus extra blankets or four blankets if no sleeping bag
- two pairs of rough wear long slacks, one pair of shorts
- two long-sleeved shirts or sweaters
- a jacket that will reasonably protect against cold or wind
- a raincoat
- one pair of rubber boots
- two pairs of shoes: one pair of walking shoes, one pair of running shoes
- at least one sun hat
- underclothing and socks to last four days
- bathing suit

Other Items

- towel
- flashlight
- toothbrush, toothpaste, comb and/or brush, face cloth, soap, other required toiletry articles
- plastic bag for storing dirty clothes
- insect repellent (optional)
- pencils, pen, coloured pencils, eraser, ruler, scrapbook and notebook
- compass
- knapsack
- musical instrument

Note: Labelling of all personal possessions is highly recommended.

From: *Outdoor education: A resource book* (1980).

Halifax: Nova Scotia Department of Education. Used with permission.

Appendix H

Sample Evaluation Forms to Collect Student Opinion About the Program

Sample 1

Outdoor Week is now over and the staff would like you to help us evaluate the success of our school program during the past week. **You do not have to sign this.**

Following is a list of the activities and the programs presented during the week. Please indicate your opinion about each of the following by placing an 'X' under the appropriate column. P-Poor, F-Fair, S-Satisfactory, G-Good, E-Excellent. Include any comments about each activity in the space provided.

Programs	P	F	S	G	E
Mathematics: Mathematical Estimates					
Science: Snow, Ice and Wind					
Animals in Winter					

Programs**P F S G E**

Birds and Their Place in Nature					
Climbing Film					
Orienteering					
Outdoor Games and Activities					
Skiing and Snowshoeing					
Weather Talk					
Winter Camping					

Further comments on the above programs

Sample 2

Outdoor Week is now over and the staff would like you to help us evaluate the success of our school program during the past week. Please answer the questions below as fully as you can. You do not have to sign your name.

1. Would you like to have another outdoor week next year?

2. What would you like to see changed and/or added if outdoor week were held another year?

3. Do you think that you learned anything this week? What?

4. Do you feel that the material presented to you during our outdoor week was as important as material presented during a regular academic week? Why? Why not?

5. Does any one part of the program stand out in your mind? If so, which one and why?

6. Do you feel that the students should have a part in planning any future outdoor weeks?

7. Would you be willing to train and serve as a junior leader (group teacher) in a future outdoor week?

8. How could you help to improve the program?

9. What was your general reaction to our outdoor week? (Comments)

Sample evaluation forms 1 and 2 adapted from: *Outdoor education: A resource guide* (1980). Halifax: Nova Scotia Department of Education. Used with permission.

Appendix I

Solutions for Sanitizing Dishes

1. Immersion for at least one minute in clean water at a temperature of at least 82°C.
2. Immersion for at least two minutes in a lukewarm (24°C–44°C) chlorine solution of not less than 100 parts per million when freshly prepared and not less than 40 parts per million at any other time. A good rule of thumb is 30 ml of household bleach for every 4 L of water.
3. Immersion for at least two minutes in a lukewarm (24°C–44°C) solution containing a quaternary ammonium compound having a strength of at least 200 parts per million.
4. Immersion for at least two minutes in a lukewarm (24°C–44°C) solution containing an iodine base sanitizing agent having a strength of at least 12 parts per million.

Appendix J

Canada's Food Guide

Eat a variety of foods from each food group every day.

Milk and Milk Products

All milk should be pasturized. Never drink unpasturized milk.

Children up to 11 years	2-3 servings
Adolescents	3-4 servings
Pregnant and nursing women	3-4 servings
Adults	2 servings

Skim, 2%, whole, buttermilk, reconstituted dry or evaporated milk may be used as a beverage or as the main ingredient in other foods. Cheese may also be chosen.

Examples of one serving:

250 mL milk, yogurt, or cottage cheese
45 g cheddar or processed cheese

Fruits and Vegetables

4-5 servings — include at least two vegetables. Choose a variety of both vegetables and fruits — cooked or raw or their juices. Include yellow or green or green leafy vegetables.

Examples of one serving:

125 mL vegetables, fruits (raw or cooked)
125 mL juice
1 medium potato, carrot, tomato, peach, orange, or banana

Meat and Alternates

2 servings

Examples of one serving:

60–90 g cooked, lean meat, poultry, liver, or fish

60 mL peanut butter

250 mL cooked dried peas, beans, or lentils

80–250 mL nuts or seeds

60 g Cheddar, processed, or cottage cheese

2 eggs

Bread and Cereals

3–5 servings, whole grain or enriched. Whole grain products are recommended.

Examples of one serving:

1 slice bread

125–250 mL cooked or ready-to-eat cereal

1 roll or muffin

125–200 mL cooked rice, macaroni, or spaghetti

In addition, a vitamin D supplement is recommended for those consuming milk to which this vitamin has not been added.

References

The materials listed below were used during preparation of this manual. For student and teacher materials refer to Appendix A.

Beyond the classroom: A guide to outdoor education. (1985). Winnipeg: Manitoba Education.

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Rillo, Thomas J. (1985). *Outdoor education: Beyond the classroom walls* (Fastback #232). Bloomington, IN: Phi Delta Kappa.

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